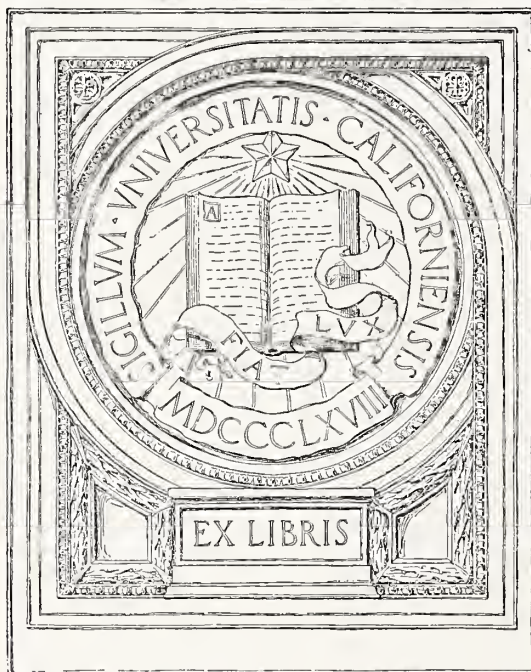
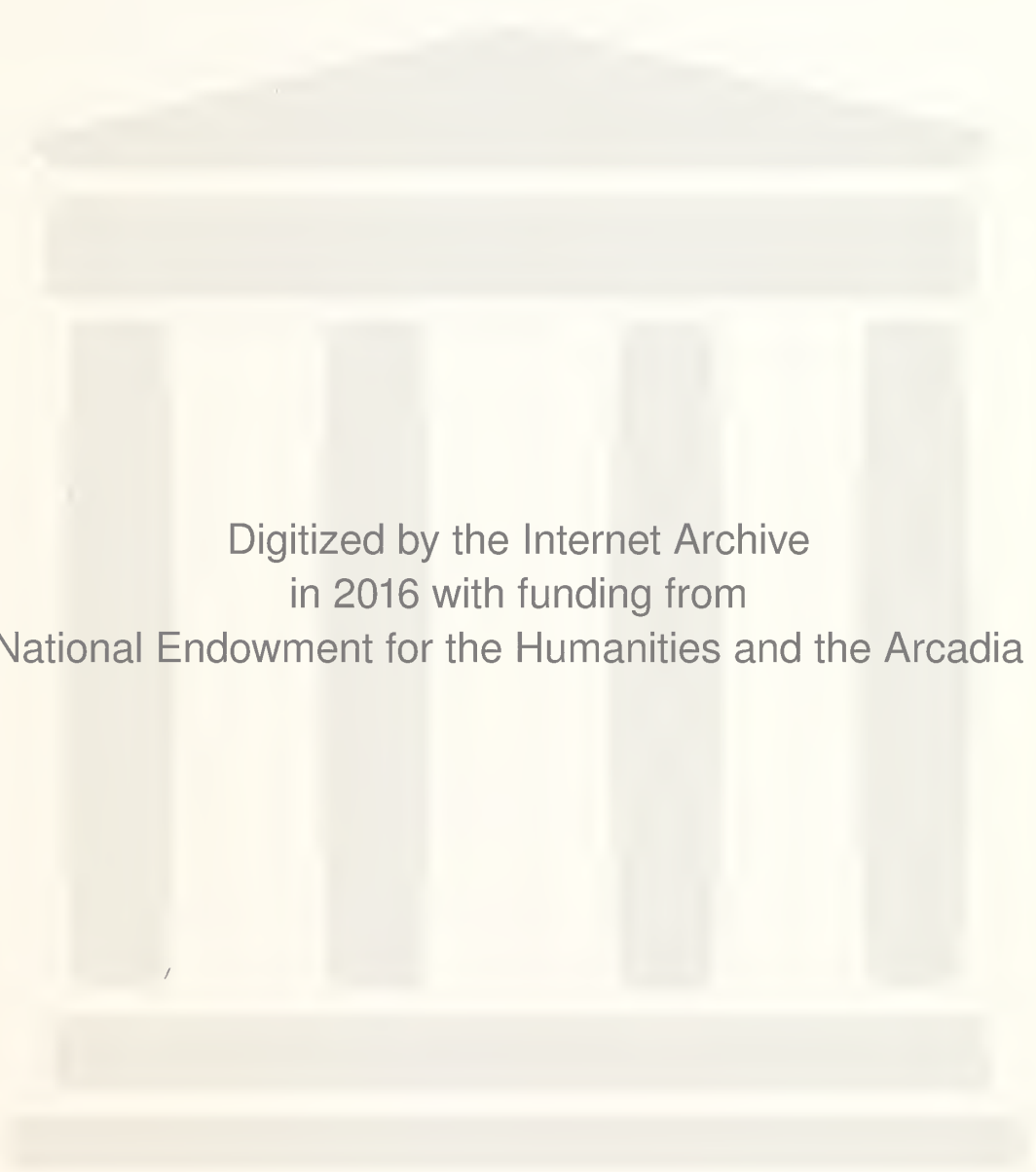


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THE JOURNAL
of the
Iowa Medical Society

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of The

IOWA MEDICAL SOCIETY



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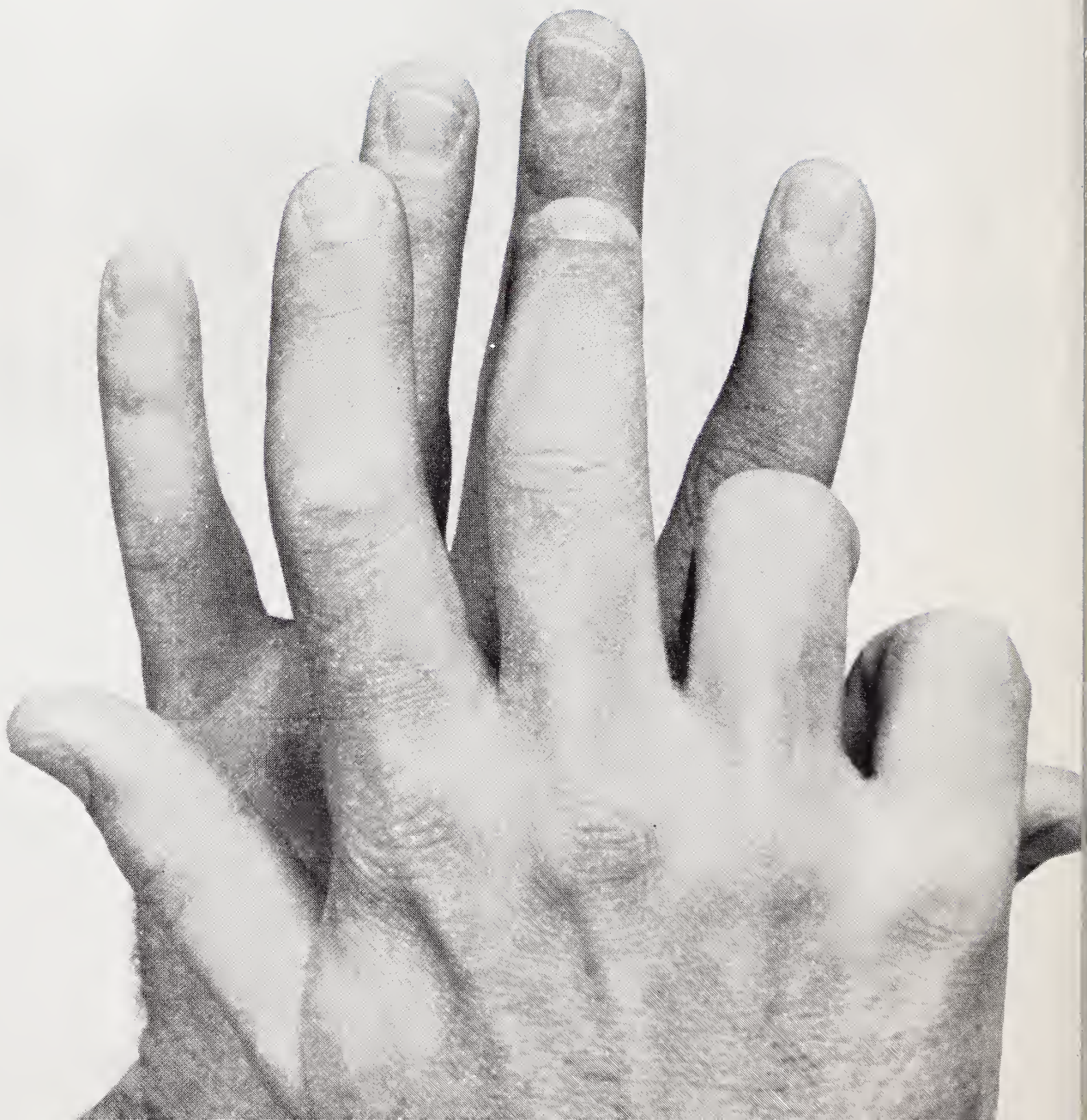
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refractory to other measures**

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clinical efficacy against
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CHLOROMYCETIN continues to remain effective against many resistant strains of staphylococci, and—alone or in combination with other antibiotics—should be considered when other antistaphylococcal drugs are ineffective.

In Acute Epiglottitis^{4,10,11}

This condition is most often caused by *H. influenzae*, most strains of which are sensitive to CHLOROMYCETIN. Therapy should be instituted at once, since the disease may progress from the first symptoms to a severe respiratory obstruction in four to six hours.

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Color Coding in Disaster Planning

HAROLD L. BRENTON, M.D.,
SOPHOCLES D. MARTY, M.D., and
JOSEPH J. KRAPEK, B.S.C.
Mason City

ON JANUARY 30, 1962, one hundred simulated casualties suddenly arrived at Park Hospital, Mason City, and were received, registered and assigned to their appropriate treatment areas in just 42 minutes. How was this possible? Twelve months earlier, utter confusion would have engulfed us. But in November, 1961, a new disaster plan had replaced the usual awkward, time-consuming procedure. The new concept is based on the use of color coding.

Will it work in a real emergency? We think it will. Why? Because of a seemingly foolproof system, easily activated and with individual responsibilities and traffic patterns well defined.

Casualties have been divided into 11 major

types, and patients of each type are tagged with slips of cardboard, each bearing a distinctive color. For every casualty type, there is at least one well-trained treatment team whose members wear tags of the same color. For each casualty type and treatment team, there is also a treatment area that is designated by a placard of the same color. By these means, volunteers who are totally ignorant of the physical structure of the hospital or the clinic are enabled to guide or transport patients to their proper stations quickly and altogether errorlessly. A practical set of forms facilitates the arrangement.

SORTING AND DISTRIBUTING PATIENTS

Arriving casualties are admitted through the usual "Emergency Entrance." Just inside that door, a triage team of physicians quickly registers each patient and attaches the special "emergency medical tag" (EMT) to his clothing. Essential information has been written by the triage physicians on the EMT, and they have used one of an assortment of felt pens to put a swath of the proper color on it. The patient's valuables are then collected and placed in a large brown-paper bag, and his EMT

COLOR CODE FOR PARK HOSPITAL, MASON CITY

Color	Patient's Problem		Teams
Brown	See note below	Lower hall of hospital, near the emergency entrance	Brown No. 1 (Sorting) Brown No. 2 (Routing)
Pink	EENT	EENT wing, clinic	Pink No. 1 Pink No. 2
Red	Shock	First floor, clinic lobby	Red No. 1
Gray	Ob-gyn	Third floor, hospital	Gray No. 1
Dark green	Burns	Clinic conference room	Dark green No. 1
Violet	Pediatric	Dermatology & pediatric wing, clinic	Violet No. 1 (med.) Violet No. 2 (surg.)
Light green	Blood donor	Laboratory	Light green No. 1
Yellow	Medical		
	Triage & Minor	Second floor, clinic lobby	Yellow No. 1
	Major medical	Medical wing, clinic	Yellow No. 2
	Contagion	Ob-gyn wing, clinic	Yellow No. 3
Orange	Major surgical	Operating rooms, hospital	Orange No. 1 Orange No. 2
Blue	Fractures	Surgical wing, clinic	Blue No. 1
Black	Minor surgery	Emergency room C-51, clinic	Black No. 1 Black No. 2

Temporary morgue—Staff library, clinic

NOTE: Only the EMT's of casualties dead on arrival are marked with a brown swath. Brown, in those instances, shows that the casualty has been examined by a member of the triage team, but is to be taken to none of the treatment centers.

number is marked on the bag. The casualty is then entered in the "triage log" (Figure 2).

A litter team—or the patient himself, if he is ambulatory—then has no difficulty in reaching the appropriate treatment area, for a colored route line corresponding to the color swath on the patient's EMT has been painted on the ceilings of the corridors through which he must walk or be carried in order to reach his destination. This system, as we have said, facilitates the use of volunteers, many of whom are totally unfamiliar with the disaster plan and with the layout of the hospital or clinic.

For example, a casualty arrives in a state of

shock. The triage physician marks his EMT with a red swath. Litter bearers take the casualty quickly along the route for which a RED line has been painted on the corridor ceilings. They are led directly to the RED treatment area (shock treatment), and they put the patient directly into the hands of the RED (shock) treatment team.

Though the above plan was designed to fit our particular hospital and clinic, it can quickly and almost effortlessly be altered to suit any other institution.

FORMS

Four forms have been devised for the necessary

The figure shows four forms arranged in a 2x2 grid. The top row contains three forms with identical headers: "SECURE TO PATIENT", "No.", "DATE", "NAME", "ADDRESS", "RELIGION", "PLACE OF INJURY", and "INJURY". Each header form has checkboxes for "Work", "Home", and "Other". The bottom row contains three forms with identical headers: "TREATMENT", "X-RAY", "TOURNIQUET", and "MEDICATION". Each header form has checkboxes for "Work", "Home", and "Other". The forms are labeled "Business Office" and "Record Dept." on the right side.

Figure 1. These four forms, which were separated for the purpose of this illustration, can be filled out simultaneously, since the top three of them are carbon-backed. When a disaster patient arrives at the hospital, an admitting (triage) team enters his name and other identifying information, if available, in the spaces which have been provided, and then separates the four copies. The top one goes to the hospital's public information officer (P.I.O.), who will provide information to the patient's relatives and to news media; the second one goes to the hospital's business office; and the third goes to the hospital's medical record room. The bottom copy, which is of lightweight cardboard, is then marked with the color chosen to designate the patient's injury, and is attached to the patient's clothing.

PARK CLINIC AND PARK HOSPITAL FOUNDATION DISASTER LOG			
EMERGENCY MEDICAL TAG NUMBER	PATIENT'S NAME	ADDRESS	REMARKS (IF ANY)

Figure 2. The form on which the triage team makes a temporary list of disaster patients.

paper work. The emergency medical tag (Figure 1) consists, originally, of a cardboard back and three thin carbon-backed plies of paper. The first ply goes to the public information officer who is to issue regular bulletins to patients' relatives and other interested persons, from a nearby office. The second ply goes to the hospital's business office, where a ledger page is set up in the patient's name. The third ply goes to the medical records room, where a chart is prepared for the discharge of the doctors' and the hospital's medicolegal responsibilities. The cardboard back, with all admitting information marked upon it, remains with the patient, and supplementary diagnostic and treat-

ment data are written upon it until a regular hospital chart has been provided for him.

The second form is the disaster log (Figure 2). It facilitates the instantaneous and orderly registry of all victims.

The last two forms minimize one of the more important problems in a disaster situation—that of traffic control and police work, particularly in the vicinity of the hospital. One of them is a disaster-team decal that can be attached to the inside lower right-hand corner of the windshield of each member's automobile (Figure 3). The last form is a disaster identification card (Figure 4) designed to pass team members through police lines, thus saving time and unnecessary discussions.

FIELD TEAMS

Two treatment teams have been trained to function outside the hospital and clinic. They will be



Figure 3. A decal for display in the lower right-hand corner of the windshield on each disaster team member's automobile.

Park Hospital - Park Clinic
DISASTER TEAM

Name.....

Roster.....

Color.....

Figure 4. An identification card to pass each disaster team member through police lines.

able to travel promptly to the scene of the disaster, but will remain in mobile-radio contact with the hospital by means of the "citizens' band." Besides providing emergency medical care in the field, each team can color-code patients on the spot, thereby facilitating their delivery to appropriate treatment areas when they reach the hospital.

In a large metropolitan area served by several hospitals, a uniform color-coding system would permit casualties sorted by any team to be brought directly to the appropriate treatment area of any hospital. Indeed, it may be suggested that a nationwide uniform color-coding system might facili-

tate the employment of medical personnel from all parts of the country in any disaster area.

SUMMARY

A unified system of handling mass casualties, through the use of a color code, has been described, and a set of practical emergency forms has been presented.

It is proposed that a uniform national color-coding system be established to facilitate medical care in regional or national emergencies as well as in local ones.

The system is easily adaptable, and is permanent when once put into use.

Give Your Patient Time, Not a Tranquilizer

"We often forget that the word *disease* fractionates into *dis-ease*, an absence of ease, and refers to a painful psychological condition as well as a physical state," Dr. Charles William Wahl, assistant professor of psychiatry at the UCLA School of Medicine, has warned doctors in the December, 1962, issue of *THE NEW PHYSICIAN*. The answer, he says, is to give more office time to patients suffering from anxiety states.

For the physician with a busy practice, he offers six specific suggestions:

- Listen to the patient. Your receptiveness will help him get things off his chest and to gain considerable relief for himself. In talking, he will organize his addled thoughts, with results that are vastly reassuring.

- Help the patient understand the people around him. By dint of your special knowledge of people, you can explain to him how they work and function.

- Help the patient to explore his life and feelings. Assist him in seeing the relationship between his stresses and conflicts, which he may be repressing, and the emergence of his frightening and painful symptoms.

- Comfort and reassure! It is the custom nowadays to sneer at these two words, but they stand for two valuable adjuncts to any physician's strictly professional skills.

- Avoid overstudying the patient. This procedure alarms far more than it reassures.

- If simple procedures don't suffice, learn to refer your patient for specific psychiatric help without punishing, humiliating or seeming to abandon him.

Dr. Wahl urges doctors not to depend unduly upon the use of drugs in treating the various forms of anxiety states. "On conservative estimates," he says, "the dispensation of the tranquilizers, painkillers and sedative drugs that have as their major application the treatment of these states amounts to some \$150 million a year. Parenthetically, money spent on alcoholic beverages, much of which are used for self-treatment of the same problems, amounts to perhaps double that figure."

He goes on to say, "No physician remains long unaware that none of the many drugs so employed are particularly good. Besides being ineffective, most of these drugs also have distressing side reactions and a tendency to habituation, in addition to other disadvantages." Since sustained anxious stress affects more than 15 different body mechanisms, to design a drug that will restore all of them without producing side effects is well nigh impossible.

"It is a sad fact," he concludes, "that we do not have a good pharmacological agent which is satisfactory in the treatment of these conditions."



Scientific Articles

Hazards in the Treatment of Children's Fractures

ALAN C. MERCHANT, M.D.

Iowa City

THE PHYSICIAN who treats fractures in children has advantages not found by the man who cares for adult trauma. The robust good health of youth, the rapid metabolic rate, and the future period of growth all contribute to the generally favorable results in children's fractures—often despite indifferent treatment. Because the child is less frequently exposed to the violence of the highway, industry and war, and because his tissues have not yet lost their elastic resilience, his fractures in general are simpler than those of his parents. The principles for the care of his fractures are also simple. However, these factors of youth do not invariably effect a favorable result; indeed the peculiarities of the growing child may at times act detrimentally. The hazards and the principles involved in the treatment of children's fractures are the topics to be discussed in this paper.

The initial danger common to all medical practice is a mistaken diagnosis. An inadequate history and a lack of the child's cooperation during examination frequently complicate the diagnosis. The interpretation of roentgenograms is more difficult because of the large amount of cartilage at the ends of long bones. The ossification centers appear in orderly sequence and are of help

when present. To avoid errors, comparative roentgenograms should be made of the opposite side, whenever a fracture is suspected clinically and the original films are unremarkable or equivocal. Figure 1a shows a supracondylar fracture of the left humerus which was overlooked on this film. It became quite apparent when comparison films were made, Figure 1b.

THE THREAT OF VASCULAR IMPAIRMENT

Vascular impairment of a fractured limb constitutes an emergency, and the results of delay or neglect are tragic indeed. Notorious in this respect is the supracondylar fracture of the elbow. Less common but equally dangerous, in the older child, is the fracture separation of the distal femoral epiphysis, produced by forced hyperextension of the knee. Here, the epiphysis is displaced anteriorly, and the posteriorly protruding shaft presses on the popliteal vessels, occluding the blood supply. Immediate closed reduction is usually simple and effective in relieving the situation.

The arterial obstruction of the supracondylar fracture of the elbow can be more insidious, and a Volkmann's ischemic contracture is the result (Figure 2). The usual cause is hemorrhage within fascial compartments. In this fracture, there usually is significant swelling in the confined region about the elbow, but no immediate vascular obstruction is present. The problem arises when, after manipulative reduction, the elbow is flexed to an acute angle to maintain the reduction. Frequently, this maneuver will stop the pulse at the wrist, and a less acute angle must be accepted.

When he wrote this article, Dr. Merchant was a senior resident in orthopedic surgery at the S.U.I. College of Medicine. His present address is 285 South Drive, Mountain View, California.

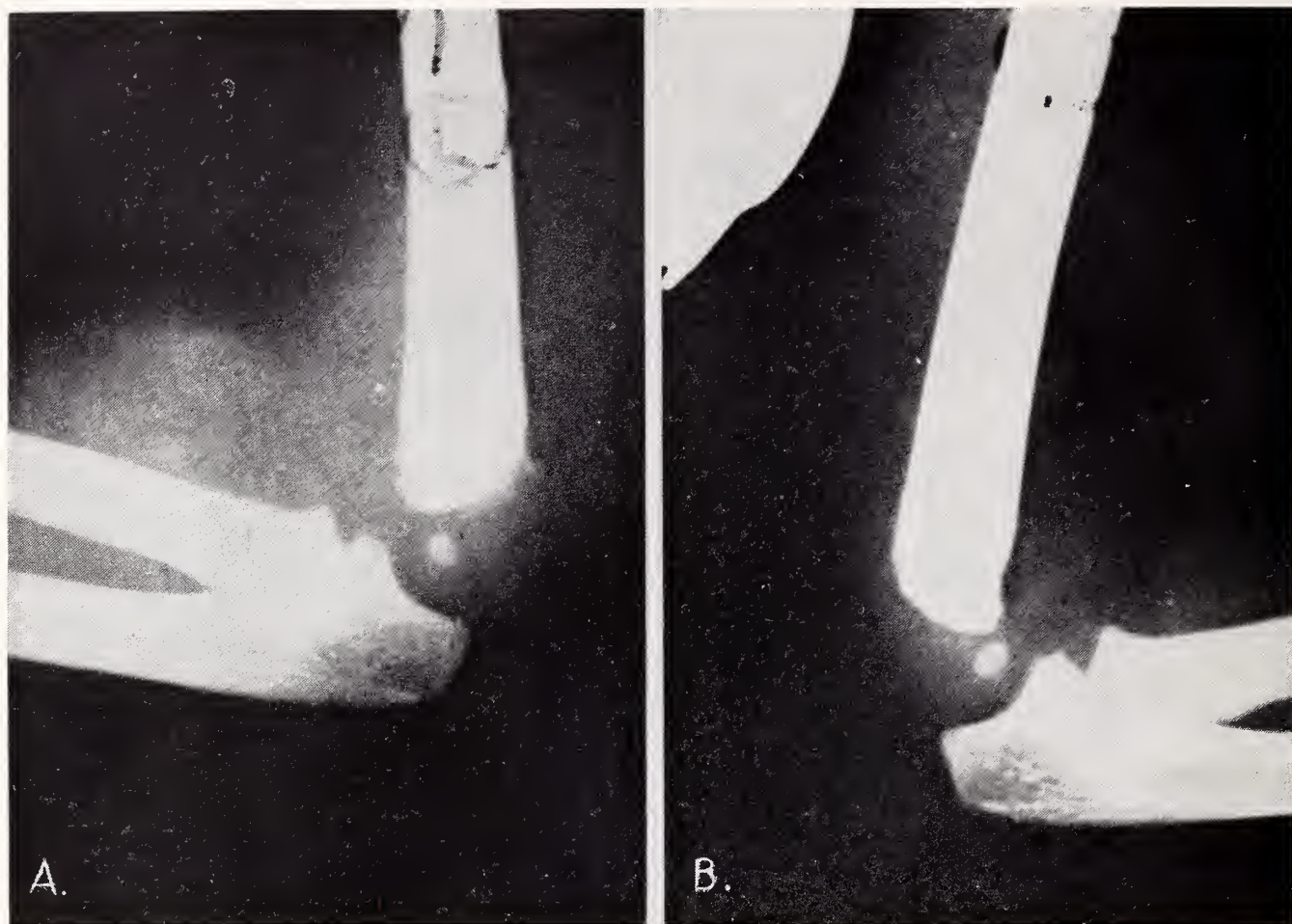


Figure 1. A supracondylar fracture of the left humerus (A) was overlooked until the comparison film (B) was taken.

The loss of reduction for this reason is not an indication for open reduction. Supracondylar fractures treated by open reduction are technically difficult, and some residual stiffness is the rule. Maintenance of satisfactory position of the fragments by means of traction with elevation is far better. One can use either skin traction or pin traction through the ulna, distal to the epiphyseal plate of the olecranon. The x-rays in Figure 3a are those of a five-year-old boy with a supracondylar fracture. Because flexion of the elbow could not be maintained (Figure 3b) without vascular impairment, the reduction was lost. Skeletal traction was then used to achieve the end result shown in Figure 3c.

At times, vascular impairment will occur gradually after closed reduction and fixation in plaster. For this reason, the child should be hospitalized and kept under careful observation for at least 24 hours. The signs of ischemia are pain, pallor, paresthesia and paralysis, but the most important is pain. A child with an adequately reduced fracture should not require opiates. A pain severe enough to necessitate them is a warning that something is wrong. If the ischemia does not respond rapidly to removal of the plas-



Figure 2. Volkmann's ischemic contracture four years after the fracture.

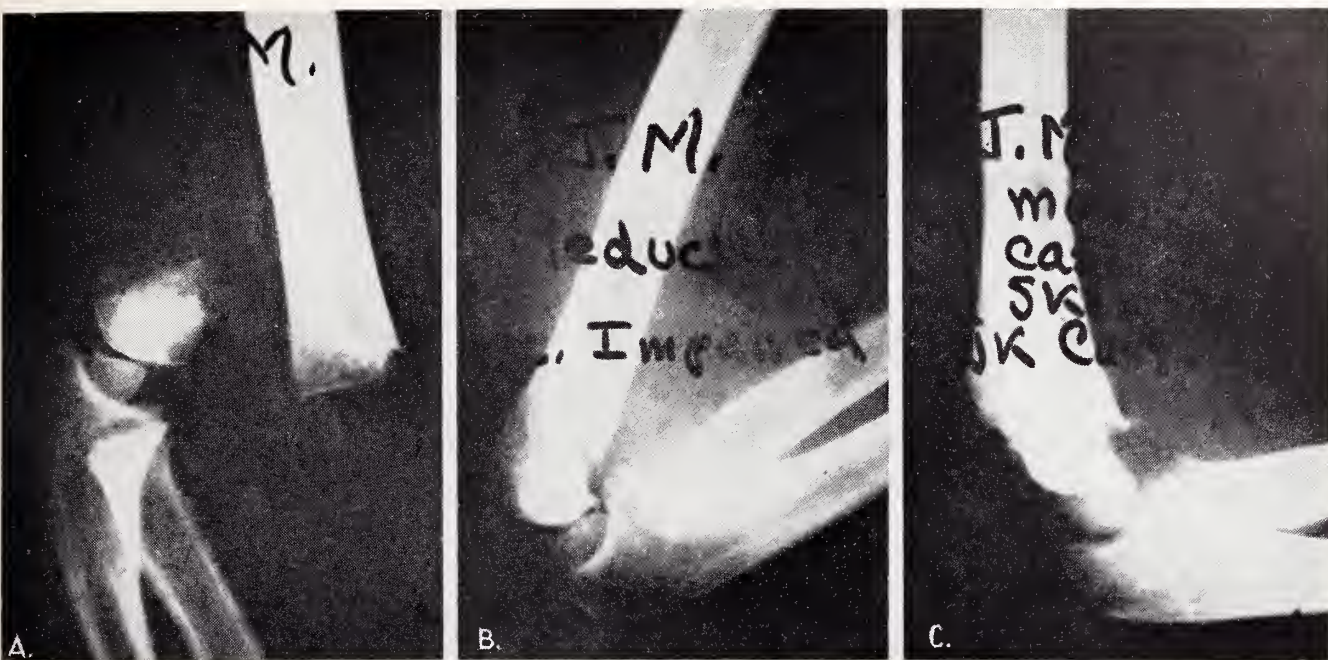


Figure 3. Supracondylar fracture in a five-year-old boy (A). The fracture was reduced but could not be maintained because of ischemia (B). Skeletal traction was used to achieve the final result (C).



Figure 4. Delayed union three months after an open reduction in a four-year-old boy. This fracture usually heals solidly in 8-10 weeks with simple plaster immobilization or traction.

ter, extension, and elevation of the elbow, no time should be lost in opening the antecubital fossa and volar forearm for release of the deep fascia and exploration of the brachial artery. Delay may lead to irreparable damage in a matter of a few hours. The aphorism "Treat the patient—not the picture"¹ is nowhere more applicable. The loss of position is inconsequential as compared with the disaster of a claw-hand.

After traction has decreased the swelling, another closed reduction may be performed, but maintenance of traction for two to three weeks is safer and preferable, until the union is solid enough for application of a right-angle cast.

THE DANGERS OF OVERTREATMENT

Ranking along with the disasters of vascular ischemia, are the dangers of overtreatment of children's fractures. Except in a handful of fractures where open reduction has been found necessary, there is almost never an indication for open reduction and internal fixation of fractures in children. Generally, closed reduction and external fixation or traction give excellent results, and failure to achieve adequate reduction by closed means is not an indication for open reduction, but rather is an indication that the more conservative measures are not being carefully and efficiently applied. A few fractures about the elbow and fractures of the femoral or humeral neck are exceptions to this rule and will be considered later.

Future growth of the child, with molding at the fracture site, will correct many deformities.

The degree of spontaneous correctibility depends on three factors: (1) the age of the child, (2) the distance of the fracture from the end of the bone, and (3) the amount of angulation. That is, the younger the child and the closer to the end of the long bone, the greater the acceptable degree of angulation at the fracture site. The most readily corrected angulation is that in the plane of joint motion.

These principles, then, define what deformities cannot be accepted. They are: valgus or varus deformity of the femoral neck, medial or lateral angulation at the elbow or knee, angulation in the middle third of the forearm except in the very young child (the deformity of a greenstick fracture tends to recur and increase unless broken through), and finally rotational deformities. Furthermore, if the angulation is too great, despite proximity to a joint, further epiphyseal growth in this new direction exaggerates the deformity. Therefore, the main goals to be attained are apposition, absence of rotational deformity, and alignment or as little angulation as possible.

End-to-end apposition is usually unnecessary and at times detrimental. Almost never is it an

indication for operative reduction. Figure 4 shows a delayed union three months after open reduction in a four-year-old boy. The x-rays in Figure 5 are the tragic result of bilateral open reductions in a twelve-year-old girl seven (right femur) and ten (left femur) months after the fractures. On the average, fractures of the femur and humerus will overgrow about one centimeter from the stimulus of the fracture itself.² A mean increase of two centimeters is found if the fracture is broken up and reset after a few weeks. It is therefore most desirable to achieve bayonet apposition of approximately this amount to compensate for the predictable overgrowth. Bayonet apposition also provides a stronger union more quickly.

To the hazards of over-treatment should be added formal physical therapy. In general, a child will use his extremity actively and in the proper amount if left alone. Passive stretching exercises or the carrying of heavy weights only increases the soft-tissue damage, enhances stiffness, and promotes the appearance of myositis ossificans or capsular ossification. In Figure 6 one can see the end result of such a complication.

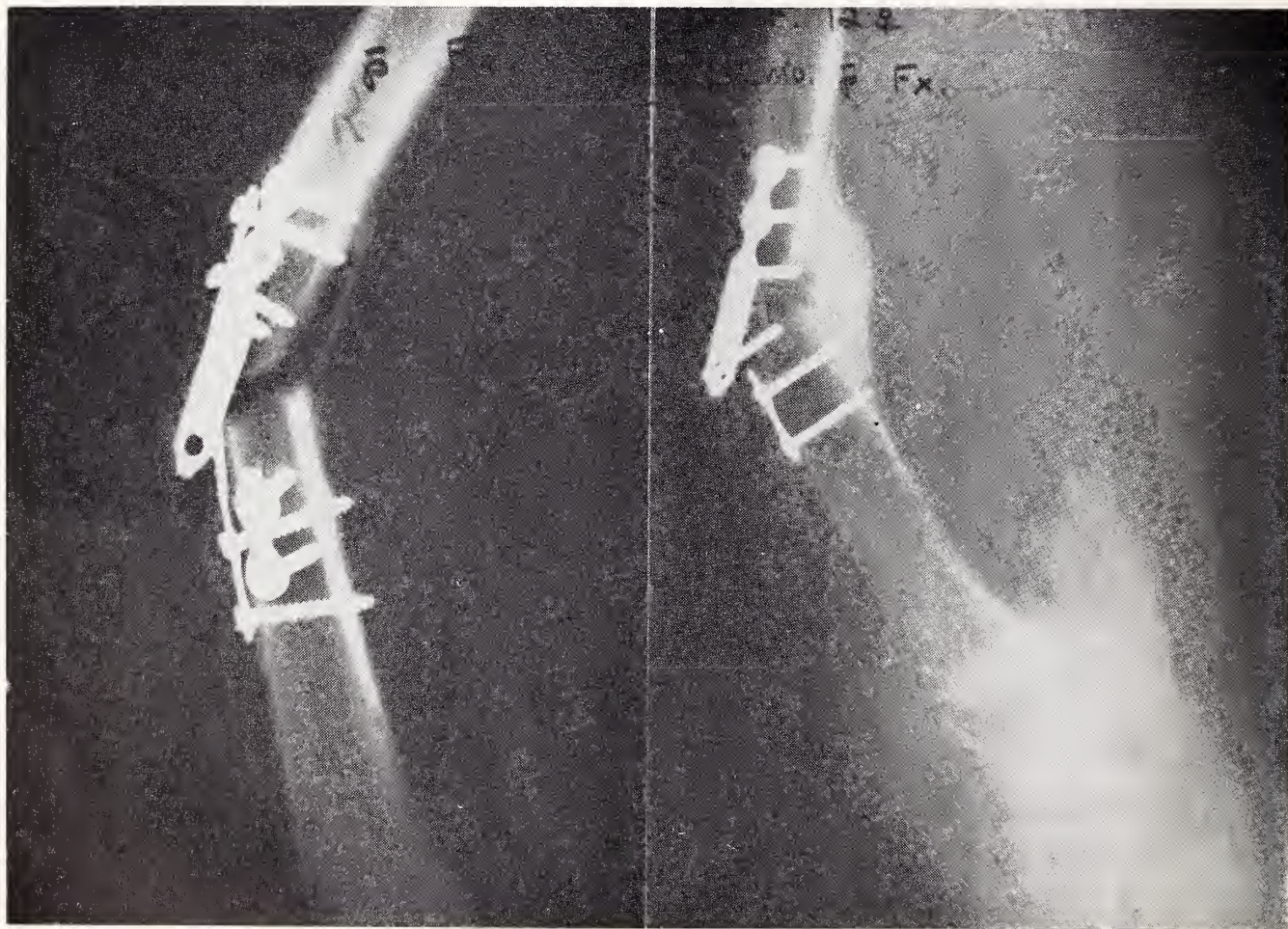


Figure 5. Non-union (right femur) and mal-union (left femur) seven and ten months respectively after internal fixation in a twelve-year-old girl. Traction for six weeks in a plaster hip spica would result in satisfactory healing of the fractures.

THE DANGERS IN TRACTION TREATMENT

After extolling the virtues of traction treatment, it is only fair at this point for me to enumerate the dangers inherent in the various methods. The essence of proper traction treatment lies in paying attention to detail, and in making frequent examinations and, if necessary, adjustments. It has been shown that more complications of traction occur in the large hospitals than in the smaller ones. In large hospitals the care of the patient in traction is too frequently left to the nurse or an inexperienced house-officer.

Bryant's traction should be used only in the very small child, and then only after examination has shown there is no evidence of hamstring tightness in the unaffected extremity. If the child is too large or the hamstrings too tight, the pull is excessive and the treatment uncomfortable. Stretch of the sciatic nerve against the fixed point where the peroneal nerve turns around the fibular neck is a real possibility and should be checked daily. Rolling and bunching of the elastic wrappings can quickly embarrass circulation, producing skin sloughs, ischemic contracture, or sciatic paralysis in the other limb. In Russell's traction, one must carefully avoid pres-

sure by the knee sling over the peroneal nerve at the fibular head. Skeletal traction introduces the possibility of a low-grade osteomyelitis from a pintract infection. Side to side motion enhances this possibility, and a threaded pin can be used to decrease this slippage.

Traumatic epiphyseal separations are peculiar to children. The physician should recognize the possibility of growth-arrest, with subsequent shortening or angulation, and he should emphasize this possibility to the parents, so that comparisons of the extremities can be made at regular intervals. In this manner, a deformity can be found promptly and proper treatment begun. Epiphyseal injuries are best treated closed, and parents should be made to understand that it is the damage at the time of injury, especially by any compressive force, rather than subsequent treatment that determines the outcome. Osteotomy was needed in the case illustrated by Figure 7 to correct the deformity caused by a medial growth arrest of the distal tibial epiphysis.

INDICATIONS FOR OPEN REDUCTION

At this point, an enumeration of those few children's fractures which commonly require open



Figure 6. Myositis ossificans following passive stretching exercises after a supracondylar fracture.

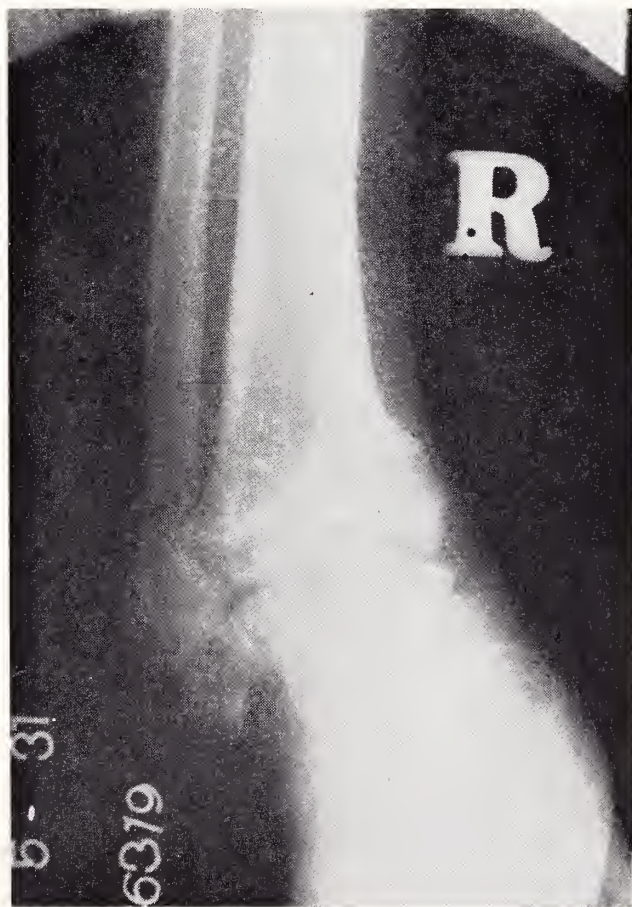


Figure 7. Medial growth arrest of the distal tibial epiphysis following an epiphyseal fracture eight years earlier.

reduction will serve to emphasize the uniformly good results obtained with careful non-operative technics in the treatment of fractures in children.

1. Fractures of the lateral condyle of the elbow can be initially difficult to interpret by x-ray. If the ossification center is still round or oval, a gross displacement may be difficult to see. Figure 8 is a diagrammatic representation. The pull of the extensor muscles rotates the fragment so that the articular surface approximates the fractured surface of the humerus. This rotation can be 90° to 180° with minimal displacement of the ossification center on the roentgenogram. Of course, union cannot occur in this position, and reduction cannot be held by closed means because of the pull of the extensors. If there is delay in treatment, the closed reduction itself becomes impossible. If left alone, the lateral condyle fails to grow, and an increased carrying angle results, as in Figure 9. In the late teens and early twenties, a late ulnar-nerve palsy frequently develops as a result of the excessive stretch. Therefore, open reduction and fixation should be performed as soon as proper facilities are available.

2. A fracture of the medial epicondyle of the elbow does not involve an epiphysis, as Figure 10 indicates. It is an apophysis. Therefore, no longitudinal growth-disturbance will result. The medial epicondyle affords attachment of the common flexor tendon, and the residual disability is bony deformity or slight muscular weakness. A displacement of the epicondyle by more than five millimeters usually is best treated by open reduction and fixation. If there has been transient dislocation of the elbow with incarceration of the

epicondylar fragment within the joint, or if there is evidence of ulnar nerve impairment, the indications for operation are urgent. Medial condylar fractures are rare, and should be opened if closed reduction has failed.

3. Fractures of the neck of the radius with minimal displacement (less than 30°) need not be reduced. If the angulation is 30° to 60° , reduction is necessary and usually can be achieved by manipulation alone. With angulation over 60° , closed reduction will usually fail, and open reduction is then necessary³ (Figure 11). When the patient is seen late, there is a temptation to resect the radial head. This will produce an immediate improvement in the range of motion, but the delayed effects of length inequality at the distal radio-ulnar joint can be disastrous. The resection should be delayed until completion of growth, when the range of motion can be improved without endangering the wrist.

4. Femoral-neck fractures are to be treated, as in adults, by internal fixation. The size of the bone precludes the use of a Smith-Petersen nail, but multiple smaller pins work very well.

This group, plus a few rare fractures involving joint surfaces, and plus fracture of the humeral neck which cannot be reduced or closed reduction maintained, constitute the body of operative treatment for fractures in children. There are serious complications arising from open reduction and internal fixation in children: non-union, osteomyelitis, deformity, refracture and prolonged morbidity. Many consecutive cases may be treated successfully by operative technics, but it takes only one tragedy to condemn these technics when uniformly excellent results can be obtained by non-operative methods. Serious complications from traction are rare.

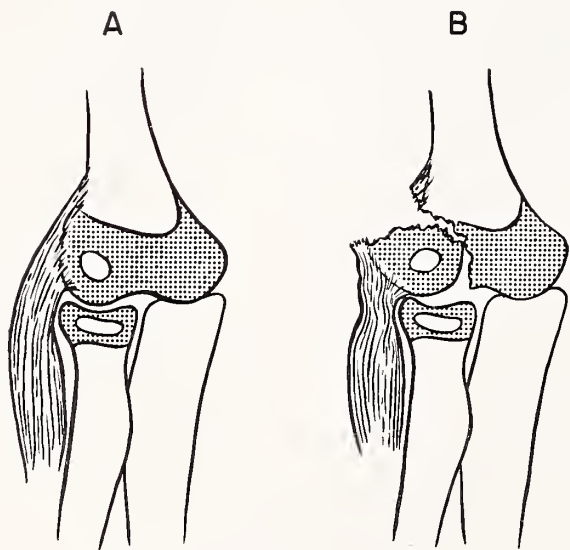


Figure 8. Diagram of anterior view of the elbow with cartilagenous portions shown by cross-hatching, (A). In a lateral condylar fracture, the extensor muscles can rotate the distal fragment without much change in the epiphyseal shadow as seen in the roentgenogram, (B).

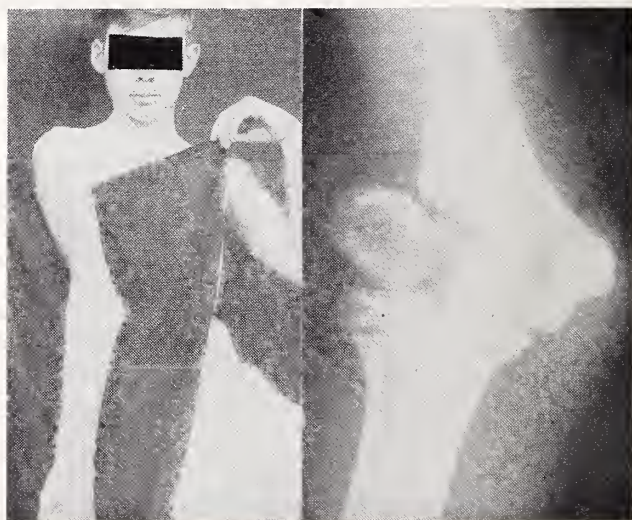


Figure 9. Increased carrying angle resulting from a non-union of a lateral condylar fracture.

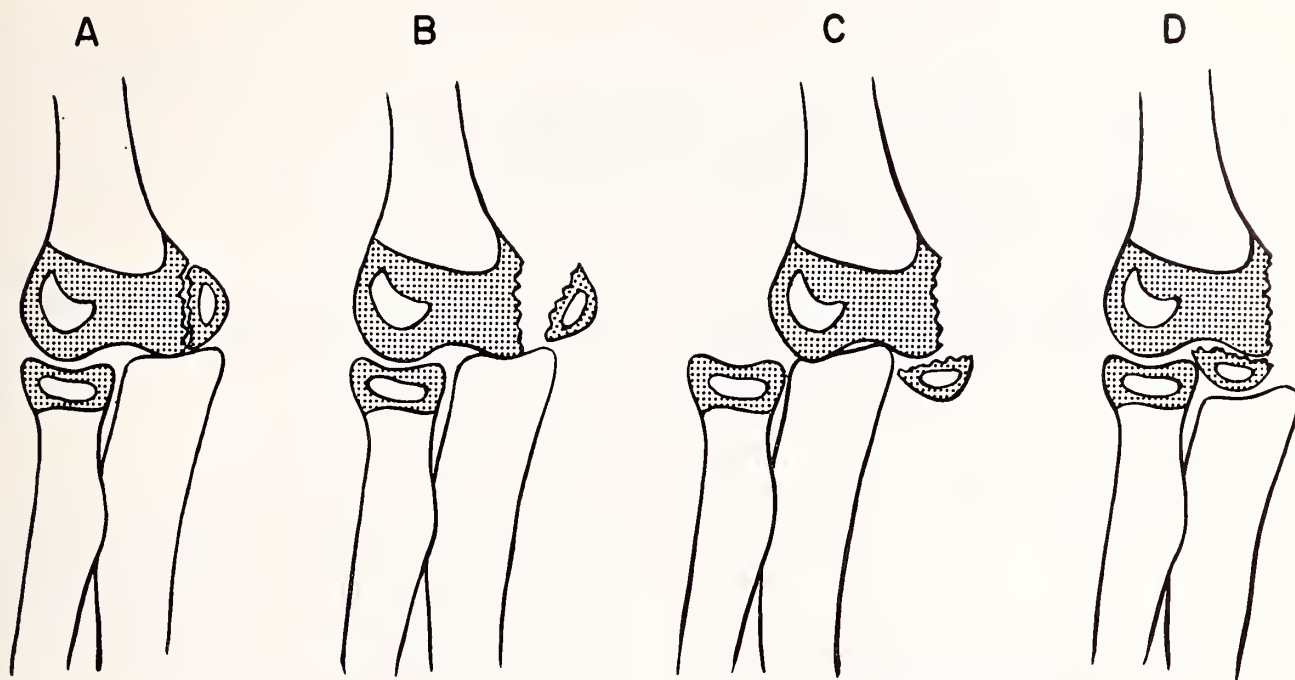


Figure 10. Diagrammatic representation of fracture of the medial epicondyle. Without displacement, (A); with displacement, (B); with dislocation, (C); and with incarceration after spontaneous reduction, (D).

SUMMARY

In summary, these points should be stressed:

1. When fracture is suspected in a child, comparative films of the normal side should routinely be taken.

2. Growth, molding, and rapid healing generally give the physician a greater margin of acceptability in the treatment of children's fractures when compared to adults'.

3. Ischemic contracture is to be avoided at all costs in the treatment of children's elbow fractures.

4. With a few specific exceptions, open reduction and internal fixation are unnecessary and dangerous in the treatment of children's fractures.

5. Apposition and alignment in three planes are the prime goals in the management of children's fractures. Follow-up x-rays in seven to ten days are extremely important in order to correct any displacement which may have occurred.

6. Passive exercise has no place in the after-care of children's fractures.

7. Delay in treatment often makes open reduction necessary and the result less favorable. After prolonged delay, even open reduction is usually contraindicated. In some of these cases, masterly neglect can be the best form of therapy.

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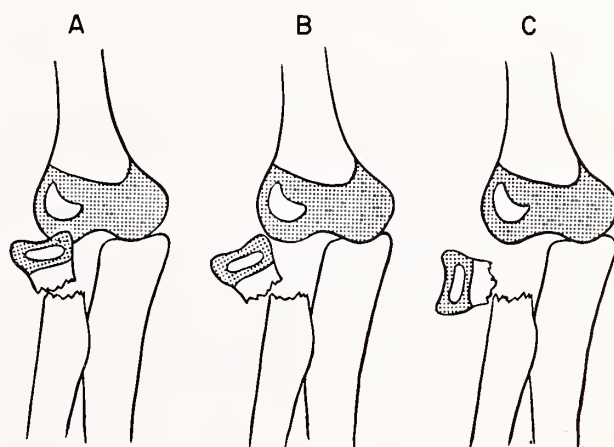


Figure 11. Fractures of the neck of the radius. Minimal displacements (less than 30°) need no reduction, (A). Displacement of 30° to 60° can usually be reduced by manipulation, (B). Closed reduction will usually fail and open reduction will be necessary if angulation is greater than 60° , (C).

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The Use of Physical Medicine In Office Practice

With Particular Emphasis on the Aftercare of Fractures

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Rochester, Minnesota

THE OFFICE PRACTICE of physical medicine includes the use of physical and occupational therapy, not only in the physician's office but also in the patient's home. Many of the procedures to be described are readily adaptable to either situation. Emphasis will be placed upon the principles underlying the use of various procedures, so that the physician may adapt these methods to the particular problems with which he is faced.

It is the feeling of many specialists in this field that the use of these treatments requires specific prescriptions and the exercise of medical judgment which the physician cannot properly delegate to the therapist. The therapist is not qualified to make such judgments, but is frequently obliged to do so when the physician abdicates his responsibility. The physician has a basic understanding of the goals of treatment and some ideas on how these may be accomplished. Thus, possibly after discussing the matter with the therapist, he can provide a specific prescription which the therapist can understand and carry out. If the physician uses the services of the therapist infrequently, such discussions can prevent many misunderstandings and hazards.

In regard to fractures, the principal problems we seek to treat with physical medicine are swelling, limitation of motion, and malfunction of muscles. The methods employed can be summarized as heat, massage and exercise. This paper will concern the use of these methods, and attempts will be made to delineate their effects on the problems that they are intended to alleviate.

Dr. Stillwell, a staff member in the Section of Physical Medicine and Rehabilitation at the Mayo Clinic and Mayo Foundation, read this paper at the Orthopedic and Rehabilitation Seminar of the Younker Memorial Rehabilitation Center, in Des Moines, on March 31, 1962.

HEAT

Although some patients may prefer moist heat and others may prefer dry heat, the tendency either in the office or at home is to employ what is available and convenient. The reasons for using heat are founded on the physiologic effects of heat shown in Figure 1. The primary effect is an increase in temperature. One chain of events associated with change in temperature is related to the associated increase in metabolism. This engenders an arteriolar dilatation, most of the effects of which are beneficial. Worthy of particular notice, however, is the increased tendency toward formation of edema. In most instances, this effect is undesirable. The increased blood flow not only clears away metabolites but also convectively removes heat. Inadequacy in this response may result in burning the tissues.

The mechanism of the analgesic effect of heat is not known. It may be related to neutralizing the thermal gradient through the skin.¹ The increase in temperature is also associated with an increased phagocytic activity. It has been suggested that intense degrees of heating may cause arteriolar dilatation by way of the axon reflex. Some of the systemic effects of local heating are listed on the right hand side of Figure 1. Heat probably is employed most frequently for its analgesic effect, though a local increase in blood flow is also valuable in many instances.

Heat may be transferred to the tissues by conduction (as from a hot-water bottle or heating pad), by convection (as from the whirlpool bath), or by radiation (as from lamps), or it may be provided by so-called converse devices employing energy of other sorts (such as electromagnetic waves or sound waves) which can be directed into the tissues, and absorbed and converted to heat. Included in this category are shortwave diathermy, microwave diathermy and ultrasound.

The type of heat employed in the physician's office usually will depend on what is available. For use in the home we usually recommend warm soaks or radiant heat. For radiant heat, a 250-

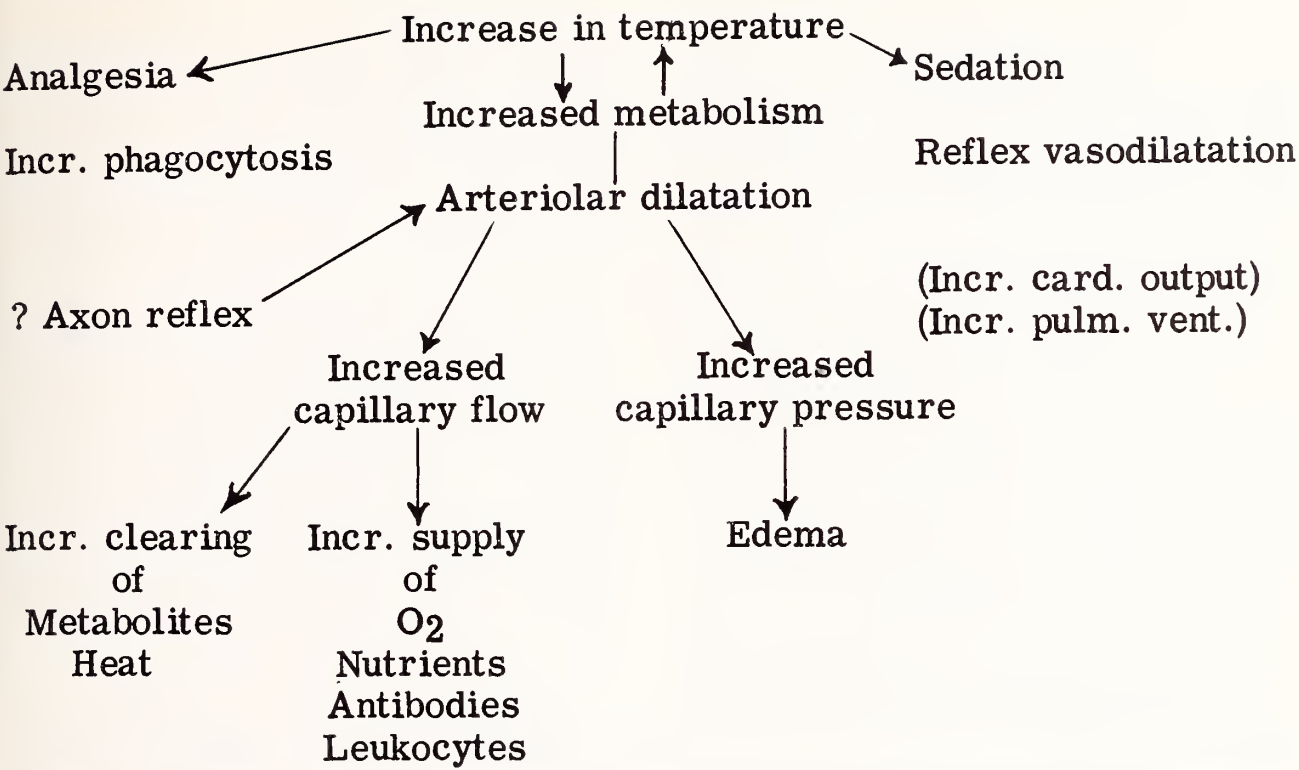


Figure 1. The physiologic effects of the local application of heat.

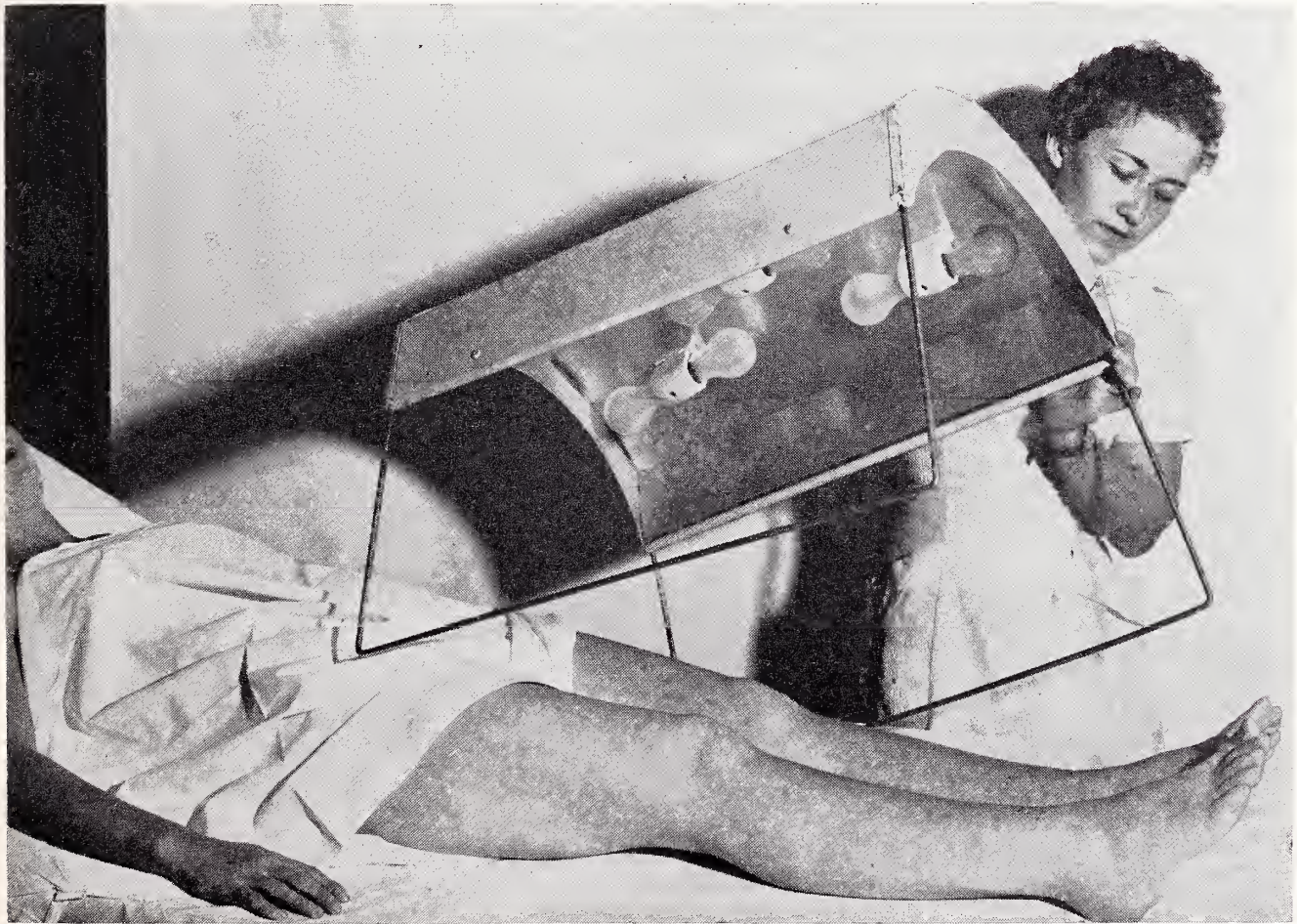


Figure 2. "Baker" or heat cradle fitted with ordinary incandescent bulbs placed over patient by therapist. (From Martin, G. M.: Physical therapy in general practitioner's office. Minnesota Med., 42:235-239, (Mar.) 1959.)

watt incandescent bulb with a built-in reflector or a "baker" is recommended. The baker, which is a heat cradle usually containing several 100-watt bulbs (Figure 2), casts heat of a more uniform intensity over a relatively larger area than does the lamp. However, over some parts of the body such as the neck, the lamp can be used more conveniently.

With most types of therapeutic heating, maximal tissue temperatures are obtained after about 20 minutes. After this length of time, the temperature in the tissue usually falls slightly because the blood flow is still increasing and is carrying away the heat faster than it is being introduced into the tissues. Heat should be used for 30 to 45 minutes, although there is no harm in using it somewhat longer. At the Mayo Clinic we discourage patients from sleeping either on or under heating devices because of the danger of burns. With extended periods of heating, it is worth noting that only the unusual person does not fall asleep.

The intensity of the heat should be that which is comfortably warm, rather than as hot as the patient can tolerate.

Most contraindications to the use of heat are relative rather than absolute. In the presence of these relative contraindications, one should use heat of a low intensity, or, if it is not strongly indicated, one may elect not to use it at all. The relative contraindications are (1) impairment of circulation, (2) impairment of sensation, (3) a clouded sensorium, (4) extreme youth or old age, and (5) noninflammatory edema.

The absolute contraindications relate to the use of diathermy. Embedded metals, if of sufficient size and of the right shape and material to act as electric conductors, will tend to concentrate the diathermic energy in and around themselves, and thus may cause local necrosis of tissues. Impairment of the sensations of temperature or pain is also an absolute contraindication, since the sensation of the patient is the only criterion for regulating the intensity of output of the diathermy machine. These absolute contraindications do not apply to ultrasound.

HYDROTHERAPY

The buoyant effects of water and its protective properties are often of great comfort to the patient whose limb has just been liberated from the protective, supporting environment of a plaster cast. Gentle agitation of the water helps him become accustomed to having the limb touched, and encourages gentle movement of the joints. The whirlpool bath, however, is essentially a stirred water bath, and any suitable large body of warm water can be a satisfactory substitute for it in the home, preferably when it is stirred by the activity of the disabled limb.

The whirlpool has special merit in the cleansing of wounds and ulcers. In such cases the directed stream of bubbles from the agitator is helpful in washing away detritus. Active motion of the limb in the water isn't an adequate substitute for the whirlpool in this respect, nor is the random agitation of the water produced by some of the bubbling devices which have been suggested for use in the home bathtub.

The temperature of the water in all instances should be specified by the physician and measured with a thermometer. There is some hazard in telling the patient to use water as hot as he can tolerate. Temperatures at or above 115°F. will coagulate some proteins. For half-hour soakings, water at temperatures in the range of 104° to 107°F. is commonly used if the patient's circulation is good. If the principal effect desired is one of cleansing rather than of heating, the temperature of the water can be kept at a lower level.

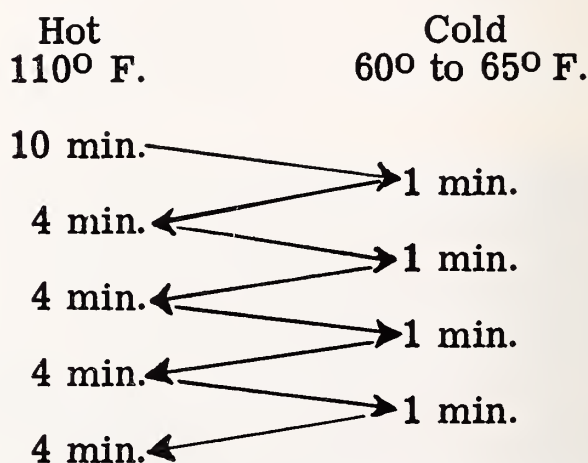


Figure 3. Temperature and time schedule for contrast bath. (From Martin, G. M.: Physical therapy in general practitioner's office. *Minnesota Med.*, 42:235-239, (Mar.) 1959.)

Prolonged heating of the hands and feet often results in undesirable swelling and increased stiffness of the digits. Many patients will be troubled less in this way with the use of contrast baths as outlined in Figure 3. Physiologic effects of such a procedure other than those due to heat have not been demonstrated, but contrast baths often seem to be more effective than other forms of heating in the treatment of reflex sympathetic dystrophies.

MASSAGE

In the aftercare of the healed fracture, massage can be of great help in reducing edema. Studies on dogs have demonstrated the effect of massage in increasing the flow of the lymph, whether it has collected from a major lymph vessel at the

base of the limb,² or from the thoracic duct.³ It also has been demonstrated that massage can increase venous flow from the extremity. On theoretical grounds it can be assumed that the reduction of interstitial fluid will improve the nutrition of the cells. Improved mobility of the joints can be observed, particularly in the digits.

In addition to massage, the reduction of edema is aided by elevation, "muscle setting" exercises making use of the muscle pump to increase venous and lymphatic flow, and external elastic support.⁴ Because the skin and subcutaneous tissues have been stretched by the swelling and have lost some of their elasticity, the swelling may persist for weeks or months after the fracture has healed. Shoring up the hydrostatic pressure of the fluid in the tissues by external elastic support will control the edema until the tissues regain their elasticity. Six or more weeks usually are required for this process, but recurrence of the edema is not to be expected when the elastic support is removed, unless there is some additional reason for it such as venous or lymphatic obstruction.

The best way to determine the point at which the patient is ready to go without an elastic support is to have him go without it for an hour or two before retiring at night. If no increase in the size of the limb occurs, the support can be removed for an additional hour or two at the end of each succeeding day, until it is determined how long the patient can go without it. In this way, a major degree of recurrence of swelling and restretching of the tissues will be avoided.

Massage also helps the patient to become accustomed to having his limb touched. It produces small amounts of movement of the tissues on one another at fascial interfaces. For many patients, massage probably offers an additional and important psychologic solace that is hard to define or measure. With the type of massage which is employed clinically, particularly after fractures, there is no increase in total blood flow into the limb.⁵

A reddening of the skin signifies the shunting of additional blood to the surface, with presumably a similar small reduction of blood flow to deeper structures.

EXERCISE

It is in the field of exercise that semantic difficulties are most likely to be encountered. In telling a patient or the patient's relative or a therapist what he wishes to have done, the physician should be certain that his hearer interprets the words that he is using in the way that he means them. For example, the word *passive* as applied to exercise has a variety of meanings for different people. To most persons it implies any motion imparted to the patient by an external force, such as that exerted by another person. To some it implies imparting gentle motion to the patient and desisting as soon as there is any evidence of

involuntary resistance on the part of the patient. Thus the physician must be specific in his prescription. If he wants some structure stretched, he should say so. If he particularly does *not* want it stretched, he should say so. Personal discussion with the therapist can be most helpful.

The three goals of therapeutic exercise after fractures are (1) to prevent or correct the loss of the range of motion of the joints, (2) to improve muscle strength, and (3) to improve coordination and skill.

Exercises To Preserve or Restore Range of Motion of Joints—Wherever possible, these exercises should be carried out actively by the patient. If assistance is required, it may be possible to provide it by means of devices such as pulleys. The assistance of another person, however, may be required. The degree of motion to be attained should be specified by the physician. A surprising number of people do not seem to know what the normal ranges of motion of their joints are. The less obvious motions, such as abduction and adduction of the fingers or supination and pronation of the forearm or foot, should not be forgotten.

It is frequently helpful to eliminate the force of gravity on the extremity, as for example in dependent circumduction of the shoulder, or by sliding the limb on a smooth surface, or by floating it in the water.

At least five repetitions of the motion should be carried out twice daily, but a greater number may be helpful and should not be discouraged. Where limitation of motion already exists, one often will notice that the joint has a tendency to "tighten up" between sessions of exercise if the exercises are done only twice daily. In such a situation, four to six sessions each day, of five to 10 repetitions each, will prove more nearly adequate. In many instances the patient can do the exercises any time he happens to think of them in addition to the prescribed minimum, and if this is true, he should be so advised.

Often it is easier to prevent the loss of range of motion than it is to restore the motion. In the early care of fractures, the number of joints immobilized should, of course, be kept to the essential minimum. Posture while the patient is in bed also should be observed carefully.

The stretching of structures around joints is still a matter for controversy. The opinion that joints should never be stretched is rendered tenable only by the assumption that extra-articular structures such as muscles and tendons are often being stretched. This assumption is difficult to prove in many instances, although sometimes it may be valid. In any event, some stretching is often necessary to restore a good range of motion in shoulders, hips, knees and ankles. Wherever possible, it is preferable that exercise to regain the range of motion in a joint be done by the

muscles which normally control that joint. It is my personal impression that this is the *only* way that elbows and fingers should be exercised.

Exercises to Strengthen Muscles—The strengthening of muscles is accomplished by strong contractions against a load which is rather heavy for the particular muscle.⁶ Relatively few repetitions need be employed. At the Mayo Clinic, we usually use three sets of 10 repetitions, decreasing the amount of resistance for each successive set. A multitude of variations are possible, as regards the number of repetitions in a set, the number of sets of repetitions and the changes to be made in weights from one repetition to the next. Generally the maximal weight to be moved can be increased once each week by 1 pound or 10 per cent of the weight being lifted, whichever is greater (Figure 4).

If the muscle is not strong enough to lift weights against the force of gravity, this force can be eliminated by counterbalancing systems of weights and pulleys, or through the use of the smooth, powdered board. We employ the powdered board and use sandbags on the limb to increase the frictional resistance between the limb and the board. This technic can easily be employed in a physical therapy department, a physician's office, or the patient's home (Figure 5).

Sometimes the abnormality of a joint is aggravated when its muscles are exercised against resistance and when motion occurs at the joint. This happens most commonly with degenerative

changes of the patellofemoral joint when the quadriceps is being strengthened. In such cases, strengthening of the muscle usually can be carried on "isometrically." In the isometric technic, the muscle contracts and holds the load without the occurrence of motion at the joint. The load is otherwise supported while the muscle is relaxed.

Recently there has been some interest in the single, brief (isometric) contraction as a time-saving and economical strengthener of muscle. This means of strengthening muscles seems entirely feasible, but there is some doubt about its

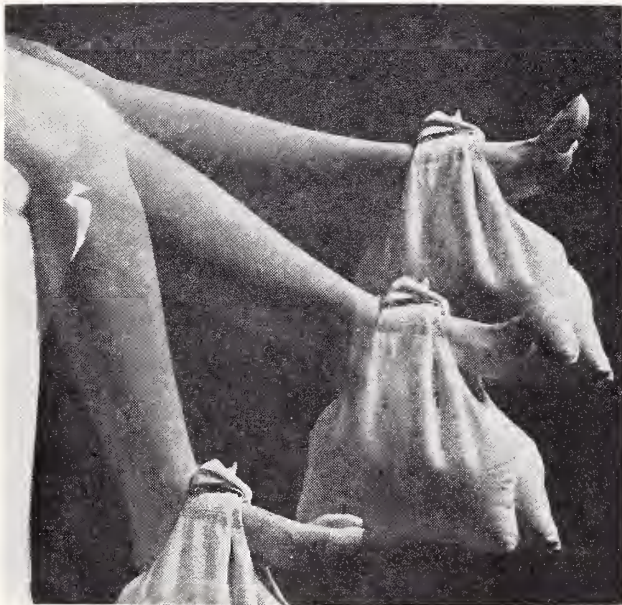


Figure 4. Quadriceps-strengthening exercises performed against the force of gravity. In the "isometric" technic, the weight would be held a few seconds in the uppermost position and then supported by another person, on a table or by some other means. (From Martin, G. M.: Physical therapy in general practitioner's office. *Minnesota Med.*, 42:235-239, (Mar.) 1959.)



Figure 5. Strengthening the flexors or extensors of the elbow, with the force of gravity eliminated by the use of a powdered board and sandbags.

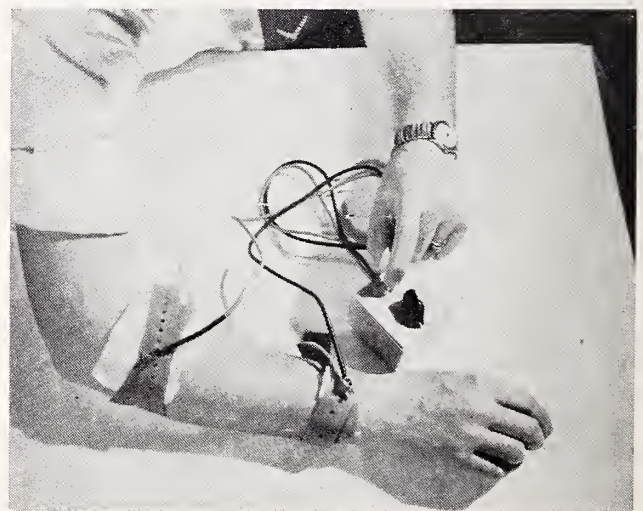


Figure 6. A battery stimulator for use by the patient to stimulate his denervated muscles. (From Stillwell, G. K.: Battery stimulator for denervated muscles. *Arch. Phys. Med.*, 37:689-692, (Nov.) 1956.)

utility in developing endurance and about the maintenance of strength after the exercises have been abandoned.

Electric Stimulation—Peripheral nerve injuries occasionally complicate fractures. For several months, there may be a loss of motor power in the muscles served by the nerve. In some cases, electric stimulation of denervated muscle has helped to retard the process of atrophy, and has helped keep the muscle healthy during regeneration of the nerve.⁷ Since atrophy develops rather quickly, it is preferable to begin electric stimulation as soon as possible after the denervation is detected. Most studies which have shown any beneficial effect of electric stimulation on denervated muscle have involved stimulation for several brief sessions each day. The only way to carry this out satisfactorily in the clinical situation is to provide the patient with his own stimulator and, preferably, to let him use it by himself

(Figure 6). It is usually recommended that he produce 20 or 25 strong contractions of the paralyzed muscle four times daily.

If reinnervation of the muscle is not expected to occur, there is no purpose in such therapeutic electric stimulation. If reinnervation is expected to occur within three months or less, stimulation probably is not necessary. It is difficult to make predictions about the efficacy of this method of treatment, but the prognosis for an early recovery is much better if a complete reaction of degeneration is not demonstrable by electro-diagnostic testing or electromyography within two weeks after the onset of the paralysis.

Occupational Therapy—Therapeutic exercise often produces only part of the desired result in the correction of stiffness and weakness and of incoordinate use of an extremity. Other activities may be needed to complete the job. These may include relatively hard usage at work or



Figure 7. The fitting of crutches is demonstrated by physical therapists. Crutches shown on the left are too long and those in the center are too short. Crutches shown on the right fit properly. (From Martin, G. M.: Physical therapy in general practitioner's office. *Minnesota Med.*, 42:235-239 (Mar.) 1959.)

play, or supervised and prescribed activities in occupational therapy.

Many people look on occupational therapy as diversional or recreational "busy work," and dismiss it as unnecessary. The patient's need for diversion and recreation is important, and leisure activities are now an accepted part of our culture, rather than merely the prerogative of "the idle rich." Watching television is not usually the best leisure activity for our patients, and it should certainly not be the only one. Some acceptable method of pounding and making noise, as a means of ventilating hostility and aggression, contributes to the emotional health of some patients. At the same time, the physical activity can build or preserve strength, endurance and tolerance for activity. The deleterious effects of rest in bed can, to some extent, be prevented by activity of this type.

Aside from these aspects, however, the occupational therapist can modify the methods used in performing many craft activities so as to help the patient gain range of motion in specific joints, or strength in specific muscles. He also can help a great deal in evaluating the ability of the patient to care for himself and in devising ways to overcome deficiencies in this function.

Most homes provide many opportunities for activity of this sort, but many patients are unwilling to enter into such activities without specifically being advised to do so. The physician should tell the patient as explicitly as possible which activities he may or may not pursue in the home.

Aids to Ambulation—If little or no weight is to be borne on a lower extremity, it is generally preferable to employ crutches rather than a walker. If full weight or nearly full weight can be borne on the extremity, but some hand support is required for balance, a crutch or cane in the opposite hand may suffice. In such instances the patient generally will walk better with a cane than with a single crutch. Many elderly people seem unable to master the use of crutches, but they can shuffle along fairly well with a simple walker. This is preferable, of course, to no walking at all, but crutches are a more versatile aid to ambulation for the patient who can learn to use them. A walker with wheels on it often will require the guidance of another person to prevent it from rolling away with the patient.

Although there are tables indicating the approximate size of crutch which will fit the patient of a particular height, there is sufficient individual variability in body build and length of arm to require the fitting of crutches to the individual patient. When the patient stands erect with the tip of the crutch about 6 inches lateral to and in front of his toes, properly fitted crutches should allow about one fingerbreadth of clearance between the top of the crutch and the anterior axillary fold. If the hand grip is at the

proper height, the elbow will be flexed about 20 to 30 degrees (Figure 7).

The patient should be cautioned that he is to bear weight on his hands and not on his axilla. The axillary bar of the crutch should be held by the shoulder adductors against the thorax in order to give him stability from side to side. Prolonged weight-bearing by way of the axilla on the axillary bar of the crutch may lead to a crutch paralysis, from which the patient may not recover for several months. Shorter crutches which come up to the region of the elbow and do not have an axillary bar on them are safer from this point of view but they may not provide sufficient stability and support for some patients.

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Cardiac Arrest Has a Neural Cause

Studies by National Heart Institute scientists Paul A. Ebert, Lazar J. Greenfield and W. Gerald Austin indicate that heart stoppage results primarily from neural stimuli originating in the peripheral nerve receptors, rather than from oxygen deficit.

They used two heart-lung machines and perfused the coronary and systemic circulations independently. When the heart contained blood low in oxygen but the systemic circulation contained fully oxygenated blood, no significant change occurred in heart rate or rhythm. However, when hypoxia was produced in the systemic circulation, heartbeats slowed in all animals and ceased in two of them, even though the hearts were being perfused with fully-oxygenated blood. Sudden systemic hypoxia produced more severe reactions than gradual hypoxia, but when the vagal nerves were severed, the effects of systemic hypoxia were abolished.

The investigators concluded that decreased oxygen levels in the systemic circulation somehow stimulate neural receptors which can slow and even stop the heart. This can happen even when the heart itself is receiving adequate oxygen from its own blood supply.

Surgical Experience With

Cancer* of the Stomach in a
Community Hospital

M. NEIL WILLIAMS, M.D.
Cedar Falls

THIS SURVEY WAS undertaken to evaluate surgical treatment of cancer of the stomach by a relatively large group of surgeons practicing in a private community hospital. An attempt is made to compare this experience in a small series of private patients with the experience of private clinics with much larger groups of patients.

All cases of cancer of the stomach were reviewed for the years 1947 to 1959, inclusive. The total number of patients with a positive diagnosis of cancer was 119. Of these, adequate follow-up information was obtained either from the patient, his relatives or the referring doctor in 116. These persons are the basis of this study. Thirty-three others were diagnosed as having stomach cancer on the basis of symptoms, physical findings and roentgenologic studies, but either refused surgery or were considered inoperable. These individuals are not included for lack of pathologic diagnosis.

ETIOLOGY

A multitude of factors have been suggested and studied as the cause of cancer of the stomach, but insufficient data and lack of controlled studies have failed, to date, to implicate any factor as an outstanding etiologic agent. One of the most promising though difficult approaches to the problem is a controlled retrospective study of the diets of stomach-cancer patients.⁶ Sommers⁹ reports that 80 per cent of all stomach-cancer patients autopsied showed hyperplastic epithelial changes in the gastric mucosa of the uninvolved portion of the stomach. This suggests irritation of the gastric mucosa by ingested substances.

When he wrote this paper, Dr. Williams was a trainee of the National Cancer Institute and a resident in surgery at Iowa Methodist Hospital, Des Moines. He is now in the private practice of general surgery at Cedar Falls.

*Sarcomas and lymphomas are not included.

SEX AND AGE DISTRIBUTIONS

Table 1 shows the number of males and females in a specific age group by decades. Males outnumbered females two to one. Berkson, *et al.*,¹ from the Mayo Clinic, report a preponderance of males over females in a ratio of 3.4 to 1. Shahon, *et al.* report a 3 to 1 ratio in a University of Minnesota series.² The oldest patient in our series was 83 and the youngest 32. The males were older (mean age 64.6) than the females (mean age 62.1). In males, the largest number of patients were found in the decade 60 to 69 years (40 per cent of the total males); appreciably fewer (20.4 per cent) in the 50 to 59 decade; and about a quarter of them (26.5 per cent) in the 70 to 79 decade. The female patients were more evenly distributed among the age groups: 39.5 per cent in the 50 to 59 decade; 23.2 per cent in the 60 to 69 decade; and 35 per cent in the 70 to 79 decade.

TABLE I
AGE GROUPINGS OF PATIENTS—PER CENT

Decade	Male	Female
30-39	3.6	2.0
40-49	3.6	0
50-59	20.4	39.5
60-69	40.9	23.2
70-79	26.5	35.0
80-89	7.2	0
Mean Age	64.6 years	62.1 years

The evidence from cancer registry and morbidity survey sources shows a definite decline in the stomach cancer rate. This has been evident for each sex and age group in the United States. In contrast, England and Wales exhibited almost stable rates for males in each age group, and only a modest decline in females.⁶ Our series suggests a decline in incidence since 1953, but the number of

cases is too small to justify any definite conclusion. No adequate explanation has been offered for the declining incidence in this country.

SYMPTOMS

A majority of the patients complained of epigastric distress or pain associated with weakness, anorexia and weight loss. Not all the records reviewed recorded whether or not the patient had lost weight, but all those of whom inquiry was made, had experienced weight loss. In many patients the weight loss was in the magnitude of 30 to 40 pounds. Marshall³ reports that weight loss was by far the most common symptom, and was found in over 90 per cent of the patients reviewed at the Lahey Clinic. In any patient with epigastric pain or distress associated with anorexia or weight loss, the diagnosis of cancer of the stomach should be considered early and seriously.

The time intervals from onset of symptoms to operation are shown in Table 2. It is unfortunate that 32 per cent of the patients did not come to operation until more than a year had elapsed.

TABLE 2
TIME INTERVAL FROM ONSET OF SYMPTOMS TO
OPERATION

	Per Cent
Less than 3 months	32
3 to 6 months	21
6 to 12 months	18
Over 12 months	32

From our study we could not determine whether it was the doctor or the patient who had procrastinated. Marshall reports that the patient was the cause of the delay in 37.5 per cent, and the family or the doctor in 62.5 per cent.³

The most serious cause of delay is the practice of treating a supposedly benign gastric ulcer medically for too long a time. There were eleven patients in this series who were found to have gastric ulcer on roentgen examination. Of these, six patients, or over half, were treated medically for nine months to a year before coming to surgery, at which time the ulcer proved to be malignant. Others in this series were no doubt so treated, but could not be evaluated, since many roentgenograms were made outside our hospital.

One such patient, on roentgen examination, had what appeared to be a benign ulcer on the lesser curvature. The patient was treated on a strict medical regimen and improved symptomatically. However, his symptoms did not disappear entirely, and one year later a second roentgen examination revealed an obviously malignant ulcer. At laparotomy

a far-advanced cancer of the stomach was found, and the patient died a few months later.

Another patient had a persistent niche on the lesser curvature which was present on repeated roentgen examinations for a period of five months and was thought benign. This patient, at operation, was found to have a small ulcerating adenocarcinoma on the lesser curvature. A high subtotal gastric resection was performed, and no lymph nodes were involved. The patient is well today, nine years later.

These two cases are cited to emphasize the fact that a positive diagnosis of gastric cancer cannot be made on the basis of roentgen findings or laboratory studies alone. The majority of diagnostic errors are made with lesions of the lesser curvature.⁷ In fact, all gastric ulcers should be considered primarily surgical lesions.⁴ Exploration must be made of any gastric ulcer that is present on roentgen exam two to three weeks after a course of active medical management. This is true even if the ulcer shows healing, for it has been shown repeatedly that even malignant ulcers show some regression under medical therapy. The ulcer must be *healed*, rather than just healing, in order for one to rest assured that it is benign. Welch and Allen⁷ report two cases of complete healing of a malignant ulcer with subsequent recurrence.

SURGICAL TREATMENT

Of the total number, 112 patients underwent surgery. These are divided into three groups—(1) those in whom the lesions were removed by gastric resection; (2) those who had palliative operations for relief of obstruction; and (3) those who underwent exploratory laparotomy only, because the lesion proved non-resectable. The patients in group 1 had the standard gastric cancer operation consisting of either a high subtotal or total gastric resection plus removal of spleen, omentum and regional nodes, en bloc. A gastrojejunostomy (Billroth II) type of anastomosis was most commonly used. Sixty-five patients underwent resection of the lesion, or 58 per cent of the total who were operated upon. A high subtotal gastrectomy was performed on 49 patients, and 16 patients underwent total gastrectomy. Marshall³ has reported that each year an average of about 25 per cent of the resected cases are total gastrectomies. This compares with 24.5 per cent in our series. The results of total gastrectomy have not been encouraging, and the operation is reserved only for those patients in whom the entire disease process cannot be removed by a high subtotal resection. Total gastrectomy is being performed less frequently today than it was a decade ago. In this small series, most of the total gastrectomies were performed in the years 1951 to 1953.

Exploratory laparotomy only was performed in 40 patients (35.7 per cent) because of the presence of a non-resectable lesion. In an additional 14 pa-

tients (12.5 per cent) some type of palliative procedure for obstruction was done. Ten patients underwent gastroenterostomy and 4 others had subtotal gastrectomy for palliation. In addition, each of three patients had had a previous resection, and at a later date underwent a second palliative procedure for obstruction (See Table 3).

TABLE 3
SURGICAL TREATMENT

	Per Cent
Operability Rate	78
Resectability Rate (Subtotal—43.7; Total 14.3) ..	58
Exploratory Only	35.7
Palliative Procedure	12.5

MORTALITY

The overall hospital mortality rate for all surgical procedures was 8.9 per cent. If one considers total gastrectomies alone, the rate rises to 16 per cent, or almost double that of lesser procedures. Berkson, *et al.*¹ reported a hospital mortality of 7.8 per cent in 1949. Marshall³ reports 5-7 per cent, and Shahon² reports 6.9 per cent.

The majority of postoperative deaths were attributed to a breakdown in anastomosis that caused a fulminating peritonitis. One patient succumbed from a massive pulmonary infarction, and one from an overwhelming staphylococcus enterocolitis.

PATHOLOGY

At best, cancer of the stomach is difficult to classify pathologically. One cannot adequately compare cancers from one institution with those from another because of a wide variance in classifications. Suffice it to say that all mucosal cancers of the stomach are adenocarcinomas. Most of these are of a mixed type having varying degrees of ulceration, polypoid formation, and papillary and scirrhous elements.

The adenocarcinomas were divided into three

TABLE 4
PATHOLOGY

Adenocarcinoma	Number	With Nodes Involved	Without Nodes Involved
Mixed	80	56 (70%)	24
Scirrhous	18	10 (56%)	8
Mucinous	5	4 (80%)	1
Average Metastatic Rate—67.9%			

main types: (1) mixed, (2) scirrhous or linitus plastica, and (3) the mucinous adenocarcinomas. There were 80 (76.7 per cent) mixed, 18 (17.5 per cent) scirrhous, and 5 (4.8 per cent) mucinous carcinomas. There was one Krukenberg tumor in the series, and the patient died three months after laparotomy (See Table 4). Metastasis to the regional nodes occurred in 67.9 per cent of these tumors at the time of operation.

SURVIVAL

There were 19 patients with cancer of the stomach who were followed 10 or more years. One is living and well, and one patient lived 13 years and then died of coronary occlusion. He was clinically free of cancer at the time of his death. No autopsy was performed. The absolute 10-year survival rate in this small group of patients is 10 per cent.

One hundred one patients were followed at least five years. Thirteen patients lived five or more years, and the absolute five-year survival rate is 12.9 per cent.

The prognosis is greatly improved if there is no lymph-node involvement. In much larger series, the absolute five-year survival rates range from 10 to 18 per cent.^{1, 2, 3, 5, 8} If one considers only those cases without lymph-node metastasis at the time of resection, the five-year rate jumps to 45-50 per cent.

The five-year survival rate after resection in this series is 20 per cent. Marshall³ reports an overall five-year survival rate of 27.2 per cent after resection at the Lahey Clinic. Berkson shows that if there is no metastasis, the five-year survival rate after resection is 48.5 per cent, but with metastasis it is only 18.6 per cent.¹ Lehman reports a 21 per cent post-resection survival rate in a series of private cases⁵ (See Table 5).

TABLE 5
SURVIVAL RATES

	5 year	10 year
Absolute Rate	12.9%	10%
Post-resection Rate	20.0%	—
Overall Hospital Mortality Rate—8.9%		

Our absolute five-year survival rates are in the range reported for much larger series. Five-year survival rates following resection vary from series to series, with a range of 20 to 32 per cent. Generally speaking, the reported series with high percentages of lymph-node metastases show lower survival rates. Of our patients, 67.9 per cent had nodal metastases, as compared with the 61.8 per

TABLE 6

CORRELATION OF 5-YEAR POST-RESECTION SURVIVAL RATES WITH RATES FOR NODAL METASTASES

	5-Year Survival Post-Resection Rate	Nodal Metastatic Rate
Berkson, et al.	31.6%	58.9%
Marshall, et al.	27.2%	61.8%
Ransom	28.0%	70.0%
Lehman	21.0%	57.0%
This Series	20.0%	67.9%

cent reported by Marshall³ at the Lahey Clinic, and 58.9 per cent reported by Berkson¹ at the Mayo Clinic. This we interpret to mean that our patients were diagnosed and underwent operation at later stages in their diseases. Supporting this is the fact that 40 per cent of the patients had palpable masses on initial examination in the hospital. Marshall³ reports 30 per cent of the patients in the Lahey Clinic series had palpable masses. Improving survival rates of patients with cancer of the stomach will depend on earlier diagnoses followed by adequate cancer resections (See Table 6).

SUMMARY

(1) A statistical review has been presented of 116 patients treated for cancer of the stomach during the years 1947 to 1959 inclusive at a private community hospital and representing the experience of a relatively large group of surgeons.

(2) Males outnumbered females 2 to 1. The greatest number of patients were in the 60-69 decade.

(3) The commonest symptom was weight loss, along with epigastric pain or distress. About one-third of the patients had had symptoms over a year before coming to surgery.

(4) Although this series does not bear it out, a review of mortality rates indicates that, for reasons unknown, the incidence of cancer of the stomach is decreasing in this country.⁶

(5) Early diagnosis is very important if more of these patients are to benefit from surgery. The most serious cause for delay is the practice of treating a malignant gastric ulcer medically for an extended period because of its benign appearance. If a gastric ulcer is present on roentgen examination two to three weeks after a course of medical management, it must be explored.

(6) High subtotal gastrectomy is the operation of choice for gastric cancer. Total gastrectomy is reserved for those cases in which the entire dis-

ease process cannot be removed by high subtotal resection. About 25 per cent of the resected cases are total gastrectomies—a lower incidence than that of a decade ago. Our resectability rate was 58 per cent.

(7) The overall hospital mortality rate was 8.9 per cent, but for total gastrectomies alone the mortality rose to 16 per cent.

(8) Pathologic classifications of mucosal cancer of the stomach vary widely from one institution to another, and are not very important prognostically. All are adenocarcinomas, and prognosis depends chiefly on the presence or absence of lymph-node metastases.

(9) The absolute five-year survival rate in our series was 12.9 per cent. This figure is within the range of 10 to 18 per cent for larger series. The post-resection five-year survival rate in this series is 20 per cent. All of our patients who survived five years were free of nodal metastasis at the time of operation. Post-resection survival rates in larger series of cases ranged from 20 to 32 per cent.

(10) Hope for increasing the survival rate in cancer of the stomach depends on treating patients surgically at an earlier stage of the disease.

(11) The results of surgical treatment in this series compare favorably with those reported for much larger series of private cases.

ACKNOWLEDGMENT

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These S.U.I. gynecologists present figures demonstrating the inefficacy of total hysterectomy in patients with cancer of the cervix.

Simple Total Hysterectomy in Carcinoma of the Cervix

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CARCINOMA OF THE uterine cervix is the most common malignancy of the female genital tract, and ranks second only to carcinoma of the breast as a cause of death from cancer in women. The standard treatment is radiation therapy, although in certain selected early cases some clinics utilize surgery either alone or in combination with irradiation. When surgery is employed, it must necessarily be of a radical type, such as the radical abdominal hysterectomy (Wertheim), radical vaginal hysterectomy (Schauta), or pelvic exenteration. Simple excision is generally held to be inadequate therapy, and it has been stated that cure by non-radical excision of the carcinomatous cervix constitutes proof that the lesion was not actually malignant.¹

Total hysterectomy, panhysterectomy, and complete hysterectomy are synonymous terms designating one of the most commonly performed of major surgical procedures. This operation is accepted treatment for a number of gynecologic conditions, including carcinoma *in situ* of the cervix. Patients with invasive carcinoma of the cervix are occasionally subjected to simple total hysterectomy by accident or design. This paper will report 36 years' experience with the course and subsequent management of such patients.

MATERIAL

From 1926 through 1961, a total of 107 patients with carcinoma of the cervix who had been treated either by simple total hysterectomy or excision of a residual cervical stump were seen at University Hospitals. Only three of the patients had been op-

erated upon at University Hospitals*—two in 1926 and one in 1934. Cervical carcinoma had been recognized preoperatively in the first two cases. In the third case, a benign-appearing cervical erosion had been noted on preoperative examination but had not been biopsied; carcinoma was diagnosed by pathologic study following hysterectomy for uterine fibroids. The remaining operations had been performed elsewhere, and the patients were subsequently referred to University Hospitals for additional therapy.

The types of operation performed were total abdominal hysterectomy with or without salpingo-oophorectomy in 98 cases, vaginal hysterectomy in four cases, Cesarean hysterectomy in two cases, and cervicectomy in three patients, each of whom had had a supracervical hysterectomy longer than two years previously.

Preoperative diagnoses are listed in Table 1. It will be noted that in 65 per cent of cases cervical carcinoma had been suspected or proved prior to surgery. The preoperative diagnosis was deter-

* These three cases of carcinoma of the cervix occurred in a total of 5,132 hysterectomies (both vaginal and abdominal total) performed at University Hospitals during the years 1926 through 1961.

TABLE I
PREOPERATIVE DIAGNOSIS IN PATIENTS TREATED
BY HYSTERECTOMY OR CERVICECTOMY FOR
CARCINOMA OF CERVIX, AND SEEN
SUBSEQUENTLY AT SUI HOSPITALS
1926-1961, INCLUSIVE

Carcinoma of cervix	70
"Vaginal bleeding"	16
Fibroid uterus	3
Pelvic inflammatory disease	2
Adenocarcinoma of endometrium	2
Adnexal mass	2
Carcinoma in-situ of cervix	2
Prolapse	1
Cervical polyp	1
Unknown	8
	107

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mined by examination of each patient's medical record, which in nearly all instances included a communication from the surgeon who performed the operation, a copy of the operative record, and the pathologist's report. Original pathologic material was reviewed in each case at the time of referral, and the histologic diagnosis was confirmed.

There were two types of patients—those seen during the immediate postoperative period and those seen at some later time with recurrent carcinoma.

IMMEDIATE RADIATION THERAPY

Twenty-two patients received "prophylactic" radiation therapy at University Hospitals in the immediate postoperative period (during the first six weeks after surgery). One of these patients had been operated upon at University Hospitals, and the remainder had been referred after surgery elsewhere.

The various therapeutic modalities employed are summarized in Table 2.

TABLE 2
TYPE OF RADIATION THERAPY GIVEN TO 22
PATIENTS AT UNIVERSITY HOSPITALS
IMMEDIATELY FOLLOWING HYSTERECTOMY
OR CERVICECTOMY

External radiation only	11
External plus radium	9
External plus transvaginal	1
External plus parametrial Au ¹⁹⁸	1
	22

Though the dosage of external radiation was somewhat variable, a calculated depth dose of approximately 4,000 roentgens was usually given. The radiation employed was mainly orthovoltage x-ray, although in recent years Cobalt⁶⁰ teletherapy had been used increasingly. When radium was employed, ovoids or plaques containing 30 to 50 milligrams were placed against the vaginal apex for 72 hours.

Two patients survived longer than five years following immediate irradiation. One is living and apparently free from disease six years after therapy. The other died of an unrelated cause 12 years after treatment and had no evidence of carcinoma at autopsy. The type of therapy was external radiation in both cases. Based on a total of 15 patients treated prior to 1957, the five-year survival rate is 13.3 per cent.

Five additional patients are living and have shown no evidence of recurrence for shorter lengths of time—four years (two patients), three years (one), and less than one year (two). Three of these patients were treated with external radiation plus radium, one with external radiation plus parametrial radioactive gold, and one with external

radiation alone. If all of these should reach the stage of five-year survival without evidence of recurrent malignancy (an eventuality which seems unlikely on the basis of previous experience), the overall rate would be 31.8 per cent.

Fifteen patients developed recurrent carcinoma following immediate postoperative therapy. Two of these are currently living with evidence of progressive disease, and the remainder have died.

THERAPY OF RECURRENCE

A total of 85 patients with recurrent or residual cancer following total hysterectomy or cervicectomy were referred to University Hospitals. Four patients were virtually terminal at the time of referral, and therefore were not treated further. The remaining 81 patients were given radiation therapy for recurrence, as listed in Table 3. The dosage and modality of the radiation therapy employed in each individual case was determined by the nature of the recurrence, the amount and type of any previous irradiation (40 per cent of patients had had some type of irradiation elsewhere immediately after surgery), and the general condition of the patient.

Four patients remained free from evidence of malignancy for intervals of 10 to 23 years following therapy for proved recurrence, and may be considered cured. The treatment employed consisted of external plus transvaginal radiation in two instances, external radiation alone in one instance, and radium followed by pelvic exenteration for subsequent recurrence in one instance. When one considers only the patients seen with recurrence prior to 1957, the five-year survival rate is 6.25 per cent for all cases, and 6.6 per cent for treated cases.

Three patients are living and well at intervals of four years, one year, and less than one year following therapy for proved recurrence. All were treated with external radiation plus radium. Should each of these three patients achieve five-year survival without evidence of disease, the five-year survival rates would be 8.25 per cent of all cases and 8.65 per cent of treated cases.

Recurrent malignancy developed in the remaining 74 patients treated. Seventy-two of them died

TABLE 3
TYPE OF RADIATION THERAPY GIVEN AT
UNIVERSITY HOSPITALS TO 85 PATIENTS
WITH RECURRENT CARCINOMA FOLLOWING
HYSTERECTOMY OR CERVICECTOMY

External radiation only	28
External plus radium	39
External plus transvaginal	5
Radium only	5
Parametrial Au ¹⁹⁸	4
No treatment	4
	85

(75 per cent within one year after therapy), and two are currently alive with evidence of progressive disease. Four of the cancer deaths occurred in patients who underwent radical surgical procedures subsequent to their irradiation.

DISCUSSION

Carcinoma of the cervix has long been recognized as one of the most malignant of the neoplasms afflicting women, leading one observer² to refer to it, in 1848, as "*ipso facto* a prognostic of death." Simple abdominal hysterectomy, first performed by Lagensbeck in 1825,³ seemed to offer hope of effective treatment, but it soon became apparent that this type of surgical approach seldom if ever resulted in cure.⁴ The first major breakthrough occurred approximately 65 years ago with the description, first by Ries and subsequently by Wertheim, of the technic of radical hysterectomy. Radical surgery, however, was limited by extremely high morbidity and mortality rates, as well as by the relatively small proportion of operable cases. Therefore, when radium was discovered a short time later, it seemed to offer the most useful means of therapy. Cervical cancer was the first type of tumor to be treated successfully with radium.⁵ Subsequently, other types of irradiation were added, and technics were improved. With each refinement in technic, there has been a corresponding increase in effectiveness, until at the present time the cure rate approaches 50 per cent.⁶

Although most authorities favor irradiation in all or nearly all cases, the past 20 years have seen a renaissance in radical surgery for carcinoma of the cervix. Meigs has revived the Wertheim operation, which originally included removal of the uterus, adnexa, parametrial tissues and upper portion of the vagina, and has added to it a more complete dissection including excision of the pelvic lymph nodes. While advocating the surgical approach, Meigs has been careful to point out that its use is limited to selected patients at an early stage, and that it should be performed by an individual with extensive training and experience in radical pelvic surgery.³

In spite of differing opinions about radical surgery versus irradiation in certain early cases of cervical carcinoma, there has long been unanimous agreement among authorities that the use of conventional hysterectomy must be limited entirely to carcinoma *in situ* (intra-epithelial or preinvasive carcinoma). Thirty years ago Lynch,⁷ in reporting a series of patients treated with radical hysterectomy and in advocating its use in early cases, included 26 cases of "panhysterectomy performed by competent surgeons." None of the women had survived for longer than four years, in spite of postoperative radiation therapy. The author concluded, "The time has now arrived when the case has been proven that the ordinary panhysterectomy has no place whatever in the treatment of any but microscopic and, therefore, unrecognized cancers."

Subsequent authors^{1, 4, 8, 9, 10} have been equally adamant in condemning the use of simple hysterectomy in carcinoma of the cervix.

Objection to the use of hysterectomy in cervical cancer is based on two major considerations, one practical and the other theoretical: (1) Removal of the cervix compromises any subsequent radium application, since the most effective appliances depend on the anatomic relationships of a relatively intact cervix. (2) The natural history of cervical carcinoma is one of early spread, usually lateral in the parametrial tissues, by both direct extension and lymphatic permeation.⁵ This spread is first microscopic, so that even though the tumor may seem to be confined to the cervix on gross examination, the likelihood is great that neoplasm will be present in the areas of surgical dissection.^{1, 10} Cutting across these tumor-bearing areas would be expected to disseminate the disease further.

The present study of 107 patients does not provide incontestable proof of the proposition that simple total hysterectomy is inappropriate therapy for carcinoma of the cervix, since it is theoretically possible that other patients may have been actually cured and, therefore, never referred to University Hospitals. However, when one considers only the 22 patients referred here immediately after surgery and treated with irradiation "prophylactically," he finds the results poorer than he would anticipate with conventional therapy, particularly in patients with a relatively early stage of disease. Furthermore, the very low survival rate of patients treated for recurrence, even though the majority had not had previous radiation therapy and were treated intensively, offers additional evidence that the prognosis is poorer in patients who have had total hysterectomy than in those who have not.

SUMMARY AND CONCLUSIONS

Data on 107 patients with carcinoma of the cervix subjected to total hysterectomy or cervicectomy indicate that simple excision appears to worsen the prognosis of the disease, regardless of a variety of therapeutic measures employed postoperatively. When patients develop recurrent malignancy after hysterectomy, less than 10 per cent will be cured, in spite of intensive therapy.

Thus, the present data lend support to the generally-held impression that simple total hysterectomy is absolutely contraindicated in cases of grossly invasive carcinoma of the cervix. Thorough pelvic examination and adequate biopsy of any cervical lesion are mandatory prior to hysterectomy for any reason. In addition, the routine use of cervical cytology is helpful in ruling out cervical malignancy.

If hysterectomy is performed and if the diagnosis of cervical cancer is subsequently made, an immediate and intensive course of postoperative irradiation (both external radiation and radium)

is indicated, in the hope of eradicating residual disease.

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State University of Iowa College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 53-YEAR-OLD WOMAN was admitted to the University Hospitals for the first time because of dyspnea and edema. She had been in good health until 12 years prior to her admission, when she was hospitalized elsewhere for excessive menstrual bleeding. At that time, her electrocardiogram was said to be abnormal, but she had no cardiovascular symptoms except for occasional palpitations. Four years before her entrance here, she was referred to the National Jewish Hospital, in Denver, because of dyspnea and ankle edema. The diagnoses made at that institution were non-specific myocarditis, left ventricular enlargement, congestive heart failure and myocardial irritability. During her hospitalization, she had thrombophlebitis of both legs, and later a brief episode of severe dyspnea, cough and pleuritic pain. She was discharged 10 weeks after admission with the following drugs: gitalin, acetazolamide, procainamide and warfarin sodium.

At home, she improved and was able to do light housework. Climbing stairs or lying flat precipitated dyspnea, however, and she continued to require digitalis and an oral diuretic. She stopped taking the anticoagulant and the procainamide.

In the three months preceding her admission to this hospital, progressive dyspnea and edema returned. Two months before her entrance, she complained of episodic left lateral chest pain, which radiated to the sternum and the left shoulder. The pain was not related to exertion. In the same month, she had a single episode of gross hemoptysis. One month before her entrance, she was hos-

pitalized in her home town because of dyspnea, cough, generalized weakness and diarrhea. The sputum was frothy and occasionally blood-tinged. She denied fever, but complained of night sweats. Intermittent chest pain continued. She was referred to this hospital because of her failure to improve with penicillin therapy. Additional symptoms elicited in the systems review included gradual loss of hearing and constant tinnitus in the right ear, failing appetite and ready satiety. She denied earlier symptoms of rheumatic fever, but her family physician had made the diagnosis of mitral stenosis during her initial illness four years previously.

The patient's mother and two sisters were said to have had tuberculosis.

The physical examination showed a well nourished white woman, dyspneic at rest, but in no acute distress. The temperature was 99.8°F., and the pulse was 100/min. The blood pressure was 100/80 mm. Hg. One observer thought there was a malar flush. The head, including the optic fundi, was normal. The jugular veins were distended and pulsating. A few moist rales were heard at the right lung base. The findings in the left lung indicated a pleural effusion. The heart was enlarged to the anterior axillary line, and the right ventricle was palpably overactive (4+). The pulmonary closure sound was accentuated and split. The mitral first sound was distinct but not loud. A grade II systolic murmur was present over the lower sternum and low along the left sternal border. The rhythm was regular, with frequent premature beats. The medical student assigned to the case recorded hearing an opening snap and

a sharply localized grade I apical diastolic murmur, but these were not heard by other listeners. The liver was enlarged, firm, tender and faintly pulsatile. No sign of ascites was elicited, but there was pitting edema of the legs and sacral area. The peripheral vessels and the neurologic examination were normal.

The hemoglobin level was 14.4 Gm./100 ml. The hematocrit was 49 per cent. The leukocyte count was 7,500/cu. mm., and the differential count was normal. The sedimentation rate was 3 mm./hr. by the Westergren method. The blood urea nitrogen was 25 mg./100 ml., and the creatinine was 1.2 mg. per cent. The carbon dioxide was 26.4, the sodium 146, the potassium 4.5, and the chloride 96 mEq./L. The antistreptolysin titer was 166 units. The test for C-reactive protein was slightly positive (1+).

Two of three blood cultures grew out *Staphylococcus epidermidis* and an aerobic spore-former, respectively. The electrocardiogram showed first degree A-V block, left ventricular hypertrophy and digitalis effect. A chest roentgenogram was interpreted as showing left pleural effusion, normal pulmonary vasculature and cardiomegaly, with questionable right ventricular and right atrial enlargement. Thoracentesis on the second hospital day yielded 1 150 cc. of a clear amber fluid which was sterile and revealed no acid-fast bacilli on smear.

The patient was treated with digitoxin and chlorothiazide, and was restricted to a low-salt diet, and to bed and chair. Early on the fourth hospital day, the nurses reported that her pulse was 76/min. and regular, and that she said she felt comfortable. One hour later, she was found dead in the bathroom, still seated on the toilet.

SUMMARY OF CLINICAL DISCUSSION

Dr. Raymond Sheets, Internal Medicine: Mr. Bastron will present the students' opinion.

Mr. R. D. Bastron, junior ward clerk: We think this lady had had an unrecognized attack of rheumatic endocarditis or myocarditis in her childhood, and subsequently developed mitral stenosis, with scarring and thickening of the cusps and possibly a calcification resulting in some insufficiency. This resulted in left ventricular hypertrophy, right and left atrial and right ventricular hypertrophy, and pulmonary hypertension. The abnormal electrocardiogram 12 years before her admission here could be explained on those grounds. Four years before she came here, she had an episode of congestive heart failure, and her family physician made a diagnosis of mitral stenosis. Myocarditis could have precipitated left ventricular enlargement and congestive heart failure. The progressive dyspnea, edema and chest pain, and the episode of gross hemoptysis could have been the result of mitral stenosis or pulmonary hypertension, but we feel that her sudden death was probably a consequence of a massive pulmonary infarct, since

pulmonary emboli are known to be fairly common in mitral stenosis.

Dr. Sheets: Are there any questions for Mr. Bastron?

Dr. William Wilson, Internal Medicine: I should like to know what evidence of left atrial enlargement is to be found in the protocol.

Mr. Bastron: There isn't any, but the other three chambers were enlarged.

Dr. Sheets: As you know, not every CPC case is presented as an unknown. The one today is not. Dr. Theilen will make the presentation for the staff.

Dr. E. O. Theilen, Internal Medicine: It very quickly becomes obvious in reading over this protocol that this woman had very serious heart disease, and that it had been of long duration. The protocol mentions that physicians who cared for her four years previously had entertained a diagnosis of myocarditis and felt that it was the cause of her congestive failure. I am always somewhat reluctant to make a diagnosis of myocarditis except in an acute situation, and I usually make it with some reservations, for often it is a diagnosis made by exclusion. As you probably know, this was once a very common diagnosis, and even the fibrosis associated with coronary artery disease was sometimes blamed on inflammatory processes. It wasn't long before the diagnosis of myocarditis fell into disrepute, however, and there even were some physicians who felt it probably was not an entity. That was another example of the pendulum's swinging back too far. Certainly myocarditis does occur, but perhaps it should not be called an entity because I am sure it encompasses a number of diverse disease processes, many of which are rather poorly understood.

One should not be content to make a diagnosis of myocarditis without attempting also to establish its etiology. What evidence or what clues can we obtain from the protocol concerning this woman's underlying disease process? You will note that she became ill at about the age of 41 years, or rather I should say that electrocardiographic abnormalities were first noted after she had reached the age of 41. We don't know what sort of changes those were, but they must have been fairly significant, since some comment was made about them. The protocol does not mention hypertension or valvular disease when she was 41, and such abnormalities would have been relatively easy to detect. Coronary artery disease at 41 years of age seems unlikely. First of all, this was before the menopause. The patient was not known to be diabetic, or at least no comment was made about her being so. She did not have thyroid disease. If these rather common causes of heart disease are excluded, what is left? How else can we explain the abnormal electrocardiogram?

We have to consider the various myocardiopathies, and we might quickly eliminate one of

the rare forms, idiopathic myocardial hypertrophy. I hesitate to use the term *idiopathic myocardial hypertrophy* because it gives a cloak of respectability to ignorance. There is such an entity, but we do not know its cause. It is impossible to exclude a diagnosis of familial myocardial hypertrophy or idiopathic myocardial hypertrophy from the information given, but it would be unlikely because of its rarity.

Next, let us consider another uncommon entity, endocardial fibroelastosis. This is more common in children than in adults, but an adult form of the disease is recognized. In fact, there are several forms. The type which occurs in this country is most often associated with proliferation of elastic tissue in the subendocardial layers, whereas the form which has been seen in Africa is most commonly associated with a patchy breakdown of elastic tissue in the subendocardial layers. I'd exclude a diagnosis of endocardial fibroelastosis in this patient because of a lack of diagnostic clues and because of its rarity.

The most common cause of a myocardial pathology in a woman of this patient's age would be an inflammatory process of one sort or another, not necessarily rheumatic. I believe that most of the patients who survive an attack of acute rheumatic myocarditis are not too likely to get into trouble in later years as a consequence of degenerative changes in the muscle from the inflammation. Let's consider nonrheumatic myocarditis. Acute myocarditis can follow bacterial infections. It has been reported many times after pharyngitis, or following episodes of acute sinusitis. Myocarditis secondary to diphtheria is a classic example. It has also been reported after numerous viral infections. The epidemic of Asian influenza some years ago was associated with a definite increase in the number of patients admitted to this hospital with myocarditis. Vasculitis associated with several of the collagen diseases may affect the heart muscle. Finally, acute changes may be precipitated by drug sensitivity, and one of the better known examples is the reaction sometimes observed following the treatment of amebiasis with emetine.

Returning once again to the patient's problems, I notice that she had a thrombophlebitis, and apparently had a pulmonary embolus. You might ask whether she possibly had repeated pulmonary emboli and may have developed pulmonary hypertension and right heart failure secondary to such embolism. This seems unlikely if we assume that her physicians were correct in their interpretation of left ventricular enlargement. I should not expect to see this. Furthermore, pulmonary embolism and pulmonary hypertension probably would not have explained the abnormal electrocardiogram many years before. The thrombophlebitis might well have been a coincidence in this patient, or perhaps it was secondary to chronic passive congestion.

The comment on myocardial irritability is not particularly helpful. It is perfectly true that a patient who has had non-rheumatic myocarditis may have an irritable myocardium, and it isn't very uncommon for him to have numerous premature beats and various ventricular arrhythmias in later years, when all evidence of activity of myocarditis has disappeared. In fact, ventricular arrhythmias seem to be a rather common cause of death in these patients. But again, this is not specific by any means, and any patient who is in congestive failure is likely to develop arrhythmias of one sort or another.

Three months before she was admitted to this hospital, this patient's signs of failure returned. She began having chest pain. She had hemoptysis. Both of these conditions would have been compatible with repeated pulmonary embolism and with pulmonary infarction. A large percentage of patients who have congestive heart failure, perhaps as many as 25 per cent, may have thromboembolic phenomena. Sometimes they are the result of thrombus formation in the right atrium, and sometimes they follow peripheral venous thrombosis. Mural thrombi are not at all uncommon in patients with myocarditis, with idiopathic myocardial hypertrophy or with subendocardial fibroelastosis. I think that mural thrombi are more common in the left than in the right ventricle, however. Therefore, I should expect systemic embolism rather than pulmonary embolism from these entities alone. The student was perfectly correct in saying that the hemoptysis could have been explained by mitral stenosis. That is well recognized.

A bit later on, this woman got into further difficulties, with increasing weakness, diarrhea, loss of appetite and tinnitus. These are a bit difficult to explain, although here again I should at least consider the possibility of excessive digitalis effect or digitalis intoxication. A patient who has had myocarditis and who has poor myocardial function is much more likely to develop signs of digitalis intoxication on a reasonable dose than is the patient with a healthy myocardium. As a rule, a young person in congestive heart failure from valvular disease will tolerate digitalis much better than will an old person with presbycardia or changes in the muscle itself. It is entirely possible that digitalis may have precipitated some of this patient's symptoms such as diarrhea and tinnitus, although I think later on we'll find out that this wasn't true.

The report on her physical examination states that her blood pressure was 100/80 mm. Hg. How can I explain this finding? It suggests to me that this woman had impaired myocardial contractility and a low cardiac output. Her increased heart rate was probably compensatory, in an attempt to maintain an effective output. There is one point which we might make about impaired contractility

of the heart in this case. In all probability the patient was unable to maintain an effective cardiac output, and was hypotensive despite the fact that she had a high filling pressure. Her venous pressure was elevated. This suggests that her heart muscle could not respond normally to increments in filling pressure, and that it was operating on an abnormal ventricular function curve. I hope that Dr. Eckstein will comment on ventricular function curves.

She developed signs of tricuspid insufficiency in the course of her illness. She had a systolic murmur in the proper location, a pulsatile liver and pulsating jugular veins. But does this necessarily mean that she had a tricuspid lesion? It has been suggested that she had mitral stenosis. Might she not also have had tricuspid disease and tricuspid insufficiency? I suppose that the majority of patients in congestive failure who have signs of tricuspid insufficiency do not have actual disease of the valve. The insufficiency is usually the result of right ventricular dilatation, and very often if the congestive heart failure improves, the signs of tricuspid insufficiency disappear entirely. It is said that a student who examined this lady heard an opening snap of the mitral valve. I'd suggest that the student may well have heard a third heart sound, and this might have been an exaggerated third heart sound. Her heart was dilated, and no doubt had limited ventricular distensibility. Patients with limited ventricular distensibility will have accentuated or loud third heart sounds. The student said that he heard a grade I apical diastolic murmur. Here again, we cannot reconcile his report with all of the other findings. You will note, for example, that she had left ventricular hypertrophy on the electrocardiogram. This wouldn't be compatible with a diagnosis of pure mitral stenosis. Even though it is entirely possible for an occasional patient to have severe mitral stenosis and an almost inaudible murmur, I should think that if this woman had mitral stenosis, there would have been more evidence for it, and someone else would have heard the murmur.

The protocol states that two blood cultures were positive, and that one of the organisms was *Staphylococcus epidermidis*. This bacterium seldom causes subacute bacterial endocarditis, except in cardiac surgical patients, when it probably has been introduced at the time of the operation. I suspect that both of the positive cultures in this patient were due to contaminants.

Finally, as far as the terminal event is concerned, this woman died suddenly while she was seated on the toilet. This is not an uncommon form of death. It could have been due to pulmonary embolism or embolism to the brain from a mural thrombus in the left ventricle, but the most likely explanation is that a rhythm disturbance and ventricular fibrillation were precipitated by vagal stimulation from a Valsalva maneuver.

In summary, I should say that there isn't anything in this protocol that is strongly suggestive of myocarditis, although it would be a reasonable conclusion based on some of the pros and cons mentioned earlier.

Questioner: How is the left pleural effusion to be explained?

Dr. Theilen: Most patients who have unilateral pleural effusion as a result of congestive heart failure will have a right-sided effusion. In this particular case, however, I think the effusion may have been secondary to pulmonary infarction in the left lung.

Dr. Sheets: Would you like to show the films, Dr. VanEpps?

Dr. Eugene F. VanEpps, Radiology: The postero-anterior chest roentgenogram demonstrated a left pleural effusion and generalized cardiac enlargement. Prominence of the right atrium suggested that it was either enlarged or displaced by right ventricular hypertrophy. In addition, the left border of the heart was straightened. Did that have any significance? Straightening of the left heart border is most often seen in acquired heart disease such as mitral stenosis, but it is also seen in pericardial effusion. Thus, it wasn't a specific finding. The pulmonary vasculature was prominent in the hila, but was diminished peripherally. This is seen in pulmonary hypertension from any cause. An infarct in the left base could have been present, but not seen because of the effusion.

A roentgenogram two days later demonstrated a smaller left pleural effusion and an effusion on the right. Otherwise, there was no change.

The question facing us was, "Is this a myocarditis or a pericardial effusion?" We aren't always able to differentiate the two conditions, even by means of fluoroscopy, but fluoroscopy is helpful at times.

Our impression, then, was generalized cardiac enlargement with bilateral pleural effusions from an unknown cause.

I should like to add that we can indicate the presence of pericardial fluid strongly enough to encourage the internist to needle the pericardium. This is the best method of making the diagnosis, unless one wants to use angiocardiography.

Dr. Carleton D. Nordschow, Pathology: At necropsy, this patient did have a very large heart. It weighed 600 Gm., which is approximately twice the normal weight. Most of the enlargement was in the left ventricle, but there was a lesser degree of it in the right ventricle, and a lesser degree in the atrium. Ventricular dilatation was prominent, and therefore this patient's heart was large in addition to being thick-walled. There were bilateral pulmonary infarcts of perhaps two to several weeks' duration. There were two of them, approximately two inches in diameter, on the right side, and ones of similar size on the left side. There was bilateral pleural effusion of approximately

700 cc., and ascites of approximately the same amount. The viscera were intensely congested. There was a small acoustic neuroma, 1.5 cm. in diameter, at the right eighth nerve.

It is quite difficult to classify cases of chronic myocarditis into discrete categories. There are, perhaps, three reasons for this difficulty. Like many other tissues, the heart has a limited number of ways of reacting to a particular injurious agent. When one has an opportunity to obtain tissue for evaluation, the original etiologic agent is often absent. From one case to another, the heart behaves variously in response to well known agents. *Trichina*, for example, do not encyst in the heart, and for this reason scarring with or without a granulomatous or other reaction can be found when there are no encysted trichina actually demonstrable. The diagnosis becomes difficult in this instance unless trichina are found elsewhere, and then they are implicated only by association. Another situation presents itself when there are giant cells in reactive areas in the heart. Many, today, feel that this is a manifestation of regenerating muscle within the myocardium, and not, in fact, a true granulomatous reaction.

For practical purposes, there are four general categories of myocarditis. One, known as the fetal form, occurs in newborn children. It is very rare. The second category is myocarditis associated with any of the known infectious agents, whether bacterial, viral or what not. The third type is called isolated or Fiedler's myocarditis. It may be called idiopathic, since it has been thought due to any of a number of organisms—parasitic, bacterial or viral—or to any of a number of agents to which the patient may be hypersensitive, one of the most popular being sulfadiazine. The last type includes the cases with very specific causes such as rheumatic disease, syphilitic gummata or tuberculosis, which are recognizable morphologically.

It is hard to state the true incidence of myocarditis. One method used in determining it is to tabulate the number of myocarditis cases that are found in a large number of autopsies. This task has been undertaken at a few large institutions. The largest series that I have found was one in which 90 bona fide cases of myocarditis had been discovered in 1,000 autopsies. The peak incidence had occurred in patients of the 30-70 yr. age group, and the peak was between 60 and 70 years. Since that is the very age group in which arteriosclerosis is prominent, one is faced with difficulty in interpreting old scars with or without an inflammatory reaction, and in deciding which was more important or which contributed more, arteriosclerosis or the previous inflammatory damage. The problem of morphologic diagnosis, from the gross standpoint, is just as difficult at the autopsy table as it was clinically. Often, one is presented with simply a hypertrophied and irregularly scarred heart. The findings could just as well be those of atherosclerosis. The diagnosis, from a morphologic

standpoint, rests upon the microscopic demonstration of an inflammatory reaction, and a large number of microscopic sections are often required.

The microscopic examination revealed extensive myocardial and endocardial fibrosis in the patient under discussion today, with a partially organized mural thrombus in the left ventricle. Coronary atherosclerosis was present, but minor in degree. Through the use of many microscopic sections, it was decided that small foci of chronic, non-caseative, granulomatous inflammation were causative. A stainable etiologic agent was not demonstrable. The cardiac valves were quite uninvolved, though the process was extensive, being present in both ventricles.

Death was thought to have been due to cardiac malfunction. Additional associated and incidental findings are tabulated in the diagnostic summary: myocarditis, non-specific, granulomatous; infarcts of lungs, recent; infarct of spleen, small, old; pleural effusion, bilateral; ascites; congestion of viscera; neurilemmoma, eighth nerve, right; cholecystitis, chronic, with cholelithiasis.

Dr. Lee Forker, Internal Medicine: Was there any evidence, at autopsy, of tricuspid insufficiency? Was the valve ring enlarged?

Dr. Nordschow: No.

Dr. Henry E. Hamilton, Internal Medicine: Had the patient a myocarditis that had smoldered for 12 years?

Dr. Nordschow: I don't know. From her clinical history, I think one can be relatively certain that she had had it for at least four years. She certainly had a tremendous amount of scar tissue, but I can no more than guess at how long her myocarditis had been present.

Dr. Hamilton: You mentioned that in a large series the incidence at autopsy was about 9 per cent. Were those records from a general hospital or from a heart hospital?

Dr. Nordschow: They were from a general hospital. In a hospital the size of ours, I imagine they would represent approximately 2½ years' experience.

Dr. George R. Zimmerman, Pathology: Did that 9 per cent include rheumatic myocarditis?

Dr. Nordschow: All of the specific forms of myocarditis had been separated out previously. The figure cited included none of the rheumatic, syphilitic and tuberculous forms of myocarditis.

Dr. Hamilton: Is our incidence that high, or are we just missing the diagnosis? What is the score?

Dr. Nordschow: Ours is not that high, and perhaps we are missing it. In this particular report, the authors emphasize that when but a few sections of the patient's myocardium are examined, myocarditis is often missed. Fifteen to 25 sections are deemed necessary to show myocarditis conclusively.

Dr. Sheets: Dr. Eckstein, Dr. Theilen asked you to try to apply Sarnoff's curves to this woman's situation.

Dr. John W. Eckstein, Internal Medicine: At a constant heart rate, there is a relationship between the pressure filling the heart and the amount of work which the heart does. In its simplest form, the relationship is expressed as a single curve, sometimes called a Starling curve, with mean atrial pressure on the abscissa and stroke work on the ordinate. (Stroke work = stroke volume \times mean blood pressure.) The original type of heart-lung preparations from which this Starling curve was obtained had descending limbs. The heart was said to be in failure when stroke work fell while filling pressure increased.

From experiments in intact animals,¹ and particularly from the experiments of Sarnoff,² we know that the heart can increase or decrease its work output in two ways. It can increase output by increasing the filling pressure according to the classic "Starling" relationship. It can also increase output by contracting more completely, or possibly by filling to a greater extent at a constant filling pressure—i.e., by increasing its contractility or its diastolic distensibility. In this way, one might say that the heart "shifts its gears" to a new level of function. Thus, there may be a Starling curve for any situation. This concept of a "family" of Starling curves was introduced by Sarnoff,² and it has done much to clarify thinking on the matter of cardiac failure. Normally, the level of cardiac function—the curve on which the heart operates—is determined by autonomic nervous system activity.³ The sympathetic increases function, and the parasympathetic decreases it.

I like to view the patient in cardiac failure as one who has lost his ability to function at any of the higher levels. He isn't capable of "shifting gears" when the demand for blood increases. His heart operates on a low function curve. The only way in which output can increase, so as to maintain an adequate flow of blood to the body, is for venous filling pressure to increase. This stretches the heart more during diastole, and it then pumps out a normal volume because of increased filling.

Such a heart operates farther out on a lower curve. The mechanisms which increase filling pressure result in venous congestion, which in turn gives rise to many of the symptoms of cardiac failure. I like to consider the excess aldosterone production, renal retention of sodium, peripheral venous constriction and increased blood volume as compensatory mechanisms which the body brings into play to increase the filling pressure, and thus to maintain a normal output in the presence of a reduced cardiac reserve.

The foregoing has been a rather superficial discussion of myocardial function and ventricular failure. When Dr. Theilen spoke of "loss of contractility," he meant, in the broad sense, loss of cardiac reserve.

Dr. Sheets: Dr. Eckstein, you make it sound very simple.

What about myocarditis in children, Dr. Ehmke?

Dr. Dorothy Ehmke, Pediatrics: Since we've been talking primarily about what we pediatricians call a primary myocardial disease, I should like to bring it to your attention that in the pediatric age group there are several other entities which are often confused with, or at least should be considered in the differential diagnosis of, idiopathic myocarditis. One of them is glycogen storage disease of the heart. In that disease, the age at onset is somewhere between two and six months, and the clinical picture is dominated initially by a greatly enlarged heart, but relatively few symptoms. There is usually only a very slight murmur, if any at all, and signs of congestive heart failure in such patients are relatively rare. Unfortunately there are few other physical signs that are helpful in alerting one to this diagnosis. On the electrocardiogram, there is evidence of left ventricular hypertrophy, with S-T segment and T-wave changes. Sudden death without congestive failure almost always occurs before the child reaches one year of age.

Another condition which we must consider is aberrant origin of the left coronary artery. Strictly speaking, this is a congenital malformation of the vasculature, rather than a disease entity, but it is usually included in this differential diagnosis because of the type of clinical picture that it causes in infants, where it is primarily seen. Once again the cardiomegaly is extreme, and these infants have episodes that resemble anginal attacks in adults. They usually occur in infants between two and six months of age, and death usually ensues before one year of age. Electrocardiograms are characterized by deep inversion of the T waves in standard leads and left precordial leads. In addition, there may be deep Q waves in lead I and left chest leads. Congestive failure is rare, and if present it is a terminal event.

Another disease that we should think about is medial necrosis of the coronary arteries. This is an extremely rare condition, but a very severe one. Infants who have it usually die before three months of age. In addition to the coronary arteries, the pulmonary and renal vessels are likely to be involved.

We then come to idiopathic myocarditis, a disease that is not so rare in children as are the other three that I have talked about. The clinical picture is characterized by a sudden onset of congestive failure. These children can be perfectly well, and within a few hours become severely ill. Once in a while, one obtains a history indicating that the child had a respiratory infection shortly before the onset of illness, but such usually is not the case. Patients have severe dyspnea, pallor, cyanosis and occasionally a hacking cough. These usually improve as the congestive failure is treated. It is sometimes difficult to decide whether a respiratory infection is present, and if so, whether it is the cause or is the result of the myocarditis. The patients have all the signs and symp-

toms of congestive failure. Definite cardiac enlargement is present, and the heart sounds are muffled. A gallop rhythm without a murmur is often noted. Electrocardiograms may be helpful. Low-voltage and conduction disturbances are more common in this condition than in the others that have been mentioned. Evidence of severe left ventricular hypertrophy is not common. The facts that Dr. Theilen recited in relation to digitalis intoxication in adults with idiopathic myocarditis apply to children with this disease. They appear unusually sensitive to digitalis. Many times, they will be able to accept only very small dosages, rather than the usual ones for children of similar ages.

The other condition to be considered in the differential diagnosis is subendocardial fibroelastosis. About 50 per cent of the children who have this entity present symptoms in the first six months of life. This fact is helpful as one tries to distinguish between idiopathic myocarditis and subendocardial fibroelastosis in early life, since by far the largest number of children under one year of age who fall into congestive failure from primary myocardial disease have subendocardial fibroelastosis.

Dr. VanEpps: Isn't it common for acute myocarditis in infants and children to run its course, with death resulting in 12-24 hrs.?

Dr. Ehmke: In any of the conditions that I have described, sudden death is not uncommon.

Dr. Sheets: I wonder whether membrane disruption of the myofibril would explain some of the symptoms of toxicity to digitalis. Other symptoms of digitalis toxicity are not necessarily due to the effects of the drug on the myocardium, are they?

Dr. Theilen: Dr. Sheets is quite right in stating that the toxic effects of digitalis are not confined to the myocardium, and may also involve the central nervous system. In fact, degenerative changes have been demonstrated in the central nervous system after excessive doses of digitalis. Neurologic disturbances are relatively common.

Dr. Sheets: How do you decide how much digitalis to give a patient who has myocarditis?

Dr. Theilen: That frequently is a difficult problem. Such a patient may need digitalis desperately, and yet may be quite sensitive to it. I think one should be conservative. It is better to err a bit on the side of under-digitalization than to give the drug to the point of toxicity. As a general rule, these patients will be served best if they are digitalized over a period of several days, rather than of a few hours. In addition, one should keep in mind the fact that a patient's requirement for maintenance dosage may vary. A dose that is therapeutic today may well be toxic some months later.

SUMMARY OF NECROPSY FINDINGS

Myocarditis, non-specific, granulomatous
Myocardial fibrosis, extensive, focal and diffuse, left and right ventricle
Endocardial fibrosis with partially organized mural thrombus, left ventricle
Myocardial hypertrophy and dilatation
Pulmonary infarcts, recent, bilateral
Splenic infarct, small, old
Pleural effusion, bilateral
Ascites, 600 cc.
Visceral congestion
Acoustic neuroma, right
Chronic cholecystitis and cholecystolithiasis.

CLINICAL DIAGNOSES

Myocarditis with heart failure
Pulmonary infarction.

STUDENTS' DIAGNOSES

Mitral stenosis
Mitral insufficiency
Myocarditis
Pulmonary embolus.

REFERENCES

1. Eckstein, J. W., and Horsley, A. W.: Effects of reduced cardiac sympathetic tone on myocardial function. *J. Clin. Invest.*, **40**:555-562, (May) 1961.
2. Sarnoff, S. J.: Symposium on regulation of performance of heart; myocardial contractility as described by ventricular function curves; observations on Sarnoff's law of heart. *Physiol. Rev.*, **35**:107-122, (Jan.) 1955.
3. Sarnoff, S. J., and Mitchell, J. H.: Regulation of performance of heart. *Am. J. Med.*, **30**:747-771, (May) 1961.

Coming Meetings

IOWA

Jan. 8-9	Obstetrics & Gynecology (S.U.I. Dept. of Obstetrics & Gynecology, Maternal & Child Health Div. of State Dept. of Health, and Iowa Obstetrical & Gynecological Soc.). University Hospitals, Iowa City.
Jan. 10-11	Medical Postgraduate Conference—Obstetrics and Gynecology. S.U.I. College of Medicine, Iowa City
Feb. 12-15	Refresher Course for the General Practitioner (S.U.I. College of Medicine and the Iowa Chapter of the American Academy of General Practice). Medical Amphitheater, University Hospitals, Iowa City
Feb. 21-22	Annual Meeting of the Sioux Valley Medical Association. Sheraton-Martin Hotel, Sioux City

CONTINENTAL U. S.

Jan. 9	Los Angeles Pediatric Society. Ambassador Hotel, Los Angeles
Jan. 12	Postgraduate Course on Pediatric Surgery. Children's Hospital, San Francisco
Jan. 12	Diabetes and Thyroid. Presbyterian Medical Center, San Francisco
Jan. 12-13	Psychiatry in Medical Practice (University of Southern California). San Bernardino County General Hospital, San Bernardino
Jan. 13-19	Ninth Annual General Practice Review. University of Colorado School of Medicine, Denver
Jan. 15	Radiation Therapy of Brain Tumors Supplementing Surgery (Neosho County Medical Society and The University of Kansas School of Medicine). The Southeast Kansas Tuberculosis Hospital, Chanute, Kansas

Jan. 16-18 **Eleventh Postgraduate Course—Diabetes in Review: 1963 Clinical Conference** (American Diabetes Association and The New England Diabetes Association). Statler Hilton Hotel, Boston

Jan. 17-18 **Obstetrics and Gynecology.** University of Nebraska College of Medicine, Omaha

Jan. 17-19 **Postgraduate Course on Clinics in Medical and Surgical Specialities.** University of California, San Francisco

Jan. 18 **American Society of Facial Plastic Surgery.** Hotel Elysee, New York City

Jan. 18-19 **American Society for Surgery of the Hand.** Americana Hotel, Miami Beach

Jan. 19 **Arteriosclerosis.** Presbyterian Medical Center, San Francisco

Jan. 20-25 **American Academy of Orthopaedic Surgeons.** Americana Hotel, Miami Beach

Jan. 21-23 **American College of Surgeons. Sectional Meeting.** Phoenix

Jan. 21-25 **American Thoracic Society.** University of California Medical Center, San Francisco

Jan. 21-25 **Diseases of the Blood Vessels and Problems of Thromboembolism—Diagnosis and Treatment** (American College of Physicians). Cornell University Medical College and The New York Hospital, New York City

Jan. 25-27 **Postgraduate Course on the Potential of Women.** University of California, San Francisco

Jan. 26-27 **First Conference on Pediatric Anesthesia.** Children's Hospital, Los Angeles

Jan. 27 **Homicide and Suicide, and the Medico-Legal Aspects of Psychiatry.** Neurological Hospital, Kansas City, Missouri

Jan. 28-Feb. 1 **Vaginal Approach to Pelvic Surgery.** Cook County Graduate School of Medicine, Chicago

Jan. 28-Feb. 1 **Varicose Veins.** Cook County Graduate School of Medicine, Chicago

Jan. 28-Feb. 1 **Proctoscopy and Sigmoidoscopy.** Cook County Graduate School of Medicine, Chicago

Feb. 2 **Dermatology.** Presbyterian Medical Center, San Francisco

Feb. 2-5 **Fifty-ninth Annual Congress on Medical Education** (Council on Medical Education and Hospitals of the AMA, the Advisory Board for Medical Specialties and the Federation of State Medical Boards of the U. S.). Palmer House, Chicago

Feb. 4-5 **Advanced Electrocardiology.** University of Nebraska College of Medicine, Omaha

Feb. 6-9 **American College of Radiology.** Drake Hotel, Chicago

Feb. 7-8 **Two Common Killers: Cardiovascular Disease and Cancer** (Regional Postgraduate Institute sponsored by the California Medical Association in cooperation with Loma Linda University School of Medicine). El Mirador Hotel, Palm Springs, California

Feb. 7-9 **Society of University Surgeons.** Seattle

Feb. 8-9 **Fourth Annual Congress of the Professions** (Michigan Association of the Professions). Jack Tar Hotel, Lansing, Michigan

Feb. 9-10 **Recent Advances in Drug Therapy.** University of California, San Francisco

Feb. 11-13 **Eleventh Annual Session of the Institute on Metabolic Research.** Highland-Alameda County Hospital, Oakland, California

Feb. 11-15 **Modern Physiological Concepts of Cardiovascular Disease** (American College of Physicians). Presbyterian Medical Center, San Francisco

Feb. 11-15 **Medical Surgical Clinical Symposia:** Feb. 11, Endocrinology; Feb. 12, Medical Problems in Surgical Patients; Feb. 13, Psychiatry; Feb. 14, Gastroenterology; Feb. 15, Pulmonary Disease. University of Kansas Medical Center, Kansas City, Kansas

Feb. 12-14 **Growth and Development—Management of Common Behavior Disturbances.** Medical College of Georgia, Augusta

Feb. 14-15 **Recognition and Treatment of Psychoneurotic Disorders by the General Practitioner.** University of Nebraska College of Medicine, Omaha

Feb. 14-16 **American Society of Clinical Pathologists.** New Orleans

Feb. 15-16 **Clinics in Neurology.** University of California, San Francisco

Feb. 15-17 **American College of Physicians.** Hotel Del Coronado, Coronado, California

Feb. 16-17 **Eighth Spring Postgraduate Meeting of the Los Angeles County Medical Association.** Statler Hilton Hotel, Los Angeles

Feb. 18-20 **Radiology and Radioactive Isotopes.** University of Kansas Medical Center, Kansas City, Kansas

Feb. 18-Mar. 1 **Surgical Technic.** Cook County Graduate School of Medicine, Chicago

Feb. 19 **Prevention and Treatment of Athletic Injuries** (Neosho County Medical Society and the University of Kansas School of Medicine). The Southeast Kansas Tuberculosis Hospital, Chanute, Kansas

Feb. 21-23 **Proctology and Sigmoidoscopy.** University of California at Los Angeles

Feb. 25-Mar. 1 **Course for Physicians in General Practice.** University of California, San Francisco

Feb. 25-Mar. 1 **Management of Common Fractures and Dislocations.** Cook County Graduate School of Medicine, Chicago

Feb. 25-Mar. 1 **General Surgery.** Cook County Graduate School of Medicine, Chicago

Feb. 27 **Midwinter Symposium on Heart Disease** (Los Angeles County Heart Association). Ambassador Hotel, Los Angeles

Feb. 27-Mar. 1 **Management of Trauma.** University of Colorado Medical Center, Denver

Feb. 28-Mar. 1 **Useful Laboratory Examinations and Their Interpretation.** University of Nebraska College of Medicine, Omaha

Feb. 28-Mar. 3 **Thirteenth Annual Convention of the American College of Cardiology** (Joint meeting with the Los Angeles County Heart Association). Ambassador Hotel, Los Angeles

Feb. 28-Mar. 3 **College of American Pathologists.** Rice Hotel, Houston, Texas

ABROAD

Jan. 25-Feb. 6 **Operation: Surgical Specialties** (West Indies Congress of the International College of Surgeons). Cruising aboard the S.S. Santa Rosa; clinical meetings in Puerto Rico, Jamaica, Haiti, Venezuela, Netherland West Indies. For arrangements contact International Travel Service, Inc., 116 South Wabash Avenue, Chicago 3

Feb. 20-24 **International Congress on Diseases of the Chest** (Council on International Affairs, American College of Chest Physicians). New Delhi, India. Write: Mr. Murray Kornfeld, Executive Director, 112 E. Chestnut Street, Chicago 11

Feb. 20-24 **Seventh International Congress on Diseases of the Chest** (American College of Chest Physicians). New Delhi, India

Feb. 23-27 **Pan American Doctors' Club.** Hacienda San Miguel Regla, Huasca, Hidalgo, Mexico. Write: Dr. Robert E. Reagen, Secretary, 232 Windsor Rd., Benton Harbor, Michigan

Feb. 20-Mar. 2 **Clinical Postgraduate Program** (UCLA University Extension and the School of Medicine, in cooperation with the National Autonomous University of Mexico School of Medicine). Mexico City. Write: Continuing Education in Medicine and Health Sciences, UCLA Medical Center, Los Angeles 24

Mar. 16-Apr. 7 **Clinical Postgraduate Program in Israel and Greece** (UCLA in cooperation with Hebrew University Hadassah Medical School, Tel-Hashomer Hospital and Beilinson Hospital). Jerusalem and Tel Aviv, Israel; Athens and Epidaurus, Greece. Write: Continuing Education in Medicine and Health Sciences, UCLA Medical Center, Los Angeles 24

Apr. 12-May 4 **Clinical Postgraduate Program in Japan and Hong Kong** (UCLA in cooperation with Tokyo University School of Medicine, the Atomic Bomb Casualty Commission at Hiroshima, Hong Kong University School of Medicine and the Hong Kong Department of Health). Write: Continuing Education in Medicine and Health Sciences, UCLA Medical Center, Los Angeles 24

Apr. 16-24 **International Meeting on Foreign Immunology, Medicine and Pathology** (3rd), and International Meeting on Forensic Immunology and Toxicology (1st). London. Write: Joseph W. Spelman, M.D., Philadelphia Dept. of Public Health, 13th and Wood Streets, Philadelphia 7

Apr. 18-20 **European Congress of Neurosurgery.** Rome. Write: Beniamino Guidetti, M.D., viale Università, 30, Rome

May 2-5 **Hawaii Medical Association.** Princess Kaiulani Hotel, Honolulu

May 7 **World Health Organization.** Palais des Nations, Geneva, Switzerland. Write: World Health Organization, Office of the Director-General, Palais des Nations, Geneva, Switzerland

(Continued on page 44)



A New Year's Wish

During this New Year of Nineteen Sixty-Three,
May you have

Enough happiness to keep you sweet,

Enough trials to keep you strong,

Enough sorrow to keep you human,

Enough hope to keep you happy,

Enough failure to keep you humble,

Enough success to keep you eager,

Enough friends to give you comfort,

Enough wealth to meet your needs,

Enough enthusiasm to look forward,

Enough faith to banish depression,

Enough determination to make each day
better than yesterday!

What a Way to Get Rich!

This is the time of year when the business or professional man balances his books, determines what his costs have been, and learns what his return has been from his investment and from his efforts. Thus a recent article entitled "The Cost of Doing Business," by Smith and Holland,* in the RHODE ISLAND MEDICAL JOURNAL, is particularly timely and should be of interest to every physician.

A questionnaire had been sent to each of 850 of the physicians who practice in Rhode Island, asking for complete breakdowns of their costs for the year. Since signatures were not asked for, the identities of those who cooperated are unknown. The Rhode Island Medical Society consists of 316 general practitioners and 684 specialists, and as far as possible, the forms were not sent to retired or semi-retired or to full-time salaried practitioners. Two hundred six questionnaires were returned—60 from generalists and 146 from specialists, representing a little over 24 per cent of the total.

The questionnaire concerned "Other Business Deductions" as reported on tax returns filed with the Internal Revenue Service in April, 1962. The replies indicated that the median costs of items listed on the doctors' federal tax returns for the calendar year 1961 were as follows:

Besides the questions concerning costs of doing business, each physician was asked for the num-

	Generalists	Specialists
Schedule C-2*	\$3,000.00	\$ 4,683.00
Salaries	3,200.00	4,000.00
Rent	1,400.00	1,800.00
Business interest	175.00	250.00
Business taxes	250.00	350.00
Depreciation	1,200.00	1,500.00
Repairs	250.00	275.00
Insurance	290.00	290.00
Legal and professional services	75.00	150.00
Total	\$9,840.00	\$13,298.00

ber of hours he worked each week. The median for general practitioners was 72 hrs., and for specialists 73 hrs./week. The range extended from eight hours for a semi-retired practitioner to 116 hrs. for a busy specialist.

An analysis of the mean costs shown in the above tabulation raises certain questions about their accuracy. Whether in Rhode Island or in Iowa, certainly very few physicians can rent offices for \$120 to \$150 per month. The authors state that the office space occupied by a doctor in their state commands a price in excess of \$3.50/sq. ft./year. It would seem that there must be considerable variation in the breakdowns of costs in the income tax returns of physicians in different geographical areas.

From the records of the Internal Revenue Service for 1960, listed under Medical and Other Health Services, the authors deduced that the cost of doing business for physicians, surgeons and oculists was 41.5 per cent of gross receipts, if they work as sole proprietors. If 41.5 per cent is the correct figure for their average cost of doing business, the typical general practitioner in Rhode Island has a gross income of \$23,686.00, and a net income of \$13,747.00. Using the same 41.5 per cent for the specialists, we find that the average one of them has a gross income of \$32,045.00 and a net of \$18,747.00.

As every doctor knows, it is from his net income that he pays interest and repays principal on his home mortgage, the real estate taxes on his residence, his personal property tax and his Iowa monies and credits tax. It is also from this net income that he pays his federal and state income taxes, and makes contributions to his church, to his college, to the United Campaign and to numerous other charities. The authors point out that vacations with pay, hospitalization and health insurance, social security, life insurance and retirement funds aren't provided to him, as they are provided to employed men and women. If he is to have them, or their equivalent, he must pay for them himself from his net income after taxes.

Smith and Holland conclude their article with the following pertinent remarks: "To those who still insist that the doctor is an affluent member of

* Smith, O. F., and Holland, T. J., Jr.: Cost of doing business. RHODE ISLAND M. J., 45:505-508, (Oct.) 1962. (The first-named author is a doctor of medicine, and the second is president of Medical Management of Rhode Island.)

* Schedule C-2 includes miscellaneous expenses such as telephone, automobile, office supplies, drugs, laundry, etc.

society today, we would say, 'Look around!' We would further sound a note of caution lest young people be discouraged from pursuing the exacting discipline of medicine by unthinking meddling in its economics."

Bronchiolitis in Infancy

An infant ill with bronchiolitis is a challenging responsibility to the attending physician, and any contribution to a better understanding of this condition is welcomed by all who treat sick babies. Such a contribution has been made by Heycock and Noble,* who have treated 1,230 cases of bronchiolitis at Sunderland Children's Hospital, in Sunderland, England, from 1954 to 1961. Sunderland is a city of just under 200,000 population on the west coast, just below the border with Scotland.

At the Sunderland Hospital, there is an epidemic of bronchiolitis each winter which lasts two to three months, and it is during that epidemic period that 70 per cent of each year's cases are admitted. The epidemic is regularly concurrent with an epidemic of common colds in the adult population. Of the 1,230 babies admitted with bronchiolitis, 890 were six months of age or younger. The overall mortality rate for the entire series was 5.5 per cent, but 27 of the 68 deaths occurred within six hours of the patients' admission to the hospital.

From their extensive experience, Heycock and Noble are of the opinion that bronchiolitis in infancy begins as a virus infection of the upper respiratory tract. They predicate their assumption on the presence of common colds in the infants' families, and also from the fact that older children who are exposed to the babies with bronchiolitis in the hospital wards develop common colds. They think it probable that various viruses are responsible for bronchiolitis, just as various viruses are responsible for the common cold.

The concept proposed by these British pediatricians is that the virus enters the upper respiratory tract, causing the signs and symptoms of a common cold, and then spreads to the lower bronchial tree, producing acute bronchiolitis. The signs elicited on auscultation of the lungs vary from coarse rhonchi to crepitant rales, depending upon whether obstruction or exudation is predominant. An expiratory wheeze is invariably heard. The authors feel that acute bronchiolitis is the most common type of acute infection of the lower respiratory tract in infants, and that no clear-cut distinction can be made between bronchiolitis and bronchopneumonia.

The higher mortality in the youngest infants is attributed to the relatively greater degree of obstruction produced by exudate in the small-caliber bronchi. In the older youngsters, from one to two years of age, the same infection causes nothing more than a wheezy bronchitis that reaches its

highest incidence at the height of the annual bronchiolitis epidemics.

Though the initial infection is thought to be caused by viruses, the British physicians believe that secondary bacterial infection is almost inevitable. It is thought that the bacterial invaders are already present in the upper respiratory tract, and that from there they enter the mucous membranes of the bronchi and bronchioles. Because of this inevitable hazard, the authors recommend broad-spectrum antibiotics in all cases of bronchiolitis and for the treatment of common colds in young infants, particularly during epidemic periods.

In the treatment of infants at the Sunderland Hospital, all babies showing cyanosis and restlessness were put in an oxygen tent with a flow of 6-8 L./min., an amount found sufficient to help them over the period of acute hypoxia. Deaths occurred in babies who showed signs of heart failure, rather than acute hypoxia. All babies were given antibiotics, most of them receiving tetracycline for about seven days. Some infants were given injections of penicillin in addition to oral tetracycline. Initial feedings of glucose were given, and milk was usually offered after 48 hours. Adrenal steroids were administered to only 32 patients, all critically ill, in an endeavor to reduce their bronchospasm. Steroids appeared to benefit some of the infants, but 13 of the 32 died in spite of this treatment. Bronchodilator drugs proved of little value in the acute stages of the disease. Digitalis was not given until there were signs and symptoms indicative of heart failure.

The Britons' concept of bronchiolitis is not significantly different from the views held in this country. Most clinicians administer broad-spectrum antibiotics to such babies, not because of any expected influence upon the viral infection but for the treatment of secondary bacterial infection. Babies with bronchiolitis are usually placed under oxygen as soon as the diagnosis has been made, and this therapy is not deferred until cyanosis is present and restlessness is apparent. The major threat to the infant with bronchiolitis is anoxia and exhaustion.

An essential part of therapy is saturation of the inspired air with moisture, to prevent the drying of exudates in the inflamed bronchi. This is provided by spray mist under the oxygen tent. It is surprising that this aspect of the treatment hasn't even been mentioned by the British authors. Since fluid and calorie intakes are usually completely inadequate in these babies, hydration by the administration of parenteral fluids is an important part of treatment.

An infant with a respiratory infection who develops an unproductive cough and wheezing respirations has bronchiolitis, not bronchial asthma, and it should be recognized that within a few hours his condition can become critical. These babies should be ordinarily hospitalized, given the benefit of antibiotic therapy and placed under oxygen with adequate moisture. Fortunately, the vast majority

* Heycock, J. B., and Noble, T. C.: 1230 cases of acute bronchiolitis in infancy. *BRITISH M. J.*, 2:879-881, (Oct. 6) 1962.

of them show marked improvement within 24 to 48 hours, and their signs and symptoms ordinarily clear up within a week after they enter the hospital.

Parkinsonism

It is estimated that there are at least 1,200,000 patients with Parkinson's disease in this country, and it is a reasonable assumption that almost every physician has one or more such people under his care. Although it is recognized that degeneration of the basal ganglia is the cause of the disease, the explanations for many of the unusual symptoms aren't yet entirely satisfactory. Two recent articles in the literature should provide the physician with a better understanding of the disease and should assist him in his efforts to help his patients.

Martin, Hurwitz and Finlayson,* three British physicians, have had an opportunity to observe 130 cases of parkinsonism that resulted from an epidemic of encephalitis in the years 1919 to 1925. Most of the patients have been in the Highlands Hospital for many years, and the majority of them have advanced symptoms of the disease. The British authors divided the symptoms of parkinsonism into two rather distinct categories. The *positive* symptoms of muscular rigidity, tremor and involuntary movements are thought to be release phenomena, due to the overactivity of a nervous structure that has been released from the control normally exerted by a higher center. The *negative* or deficiency symptoms are often unrecognized, and are due to a loss of function by the active nervous structure or its afferent fibers. The negative symptoms include: (1) disorders of postural fixation; (2) disorders of equilibrium and righting; (3) disorders of locomotion; (4) disorders of phonation and articulation; and (5) a heterogenous group collectively referred to as "akinesia."

The authors ascribe the disorders of postural fixation, of equilibrium and righting, and of locomotion to an interference with the central nervous system connections, which are necessary for normal postural reactions. Disorders of phonation and articulation, they attribute to muscular rigidity. Lack of facial expression and a decrease in the swing of the arm as the patient walks are examples of akinesia, and are thought to be secondary to muscular rigidity. A thorough study of the observations by the British authors will give one a better understanding of parkinsonism, and will sharpen his own observation of patients with the disease.

Doshay,** the director of the Parkinson Laboratory at Columbia-Presbyterian Medical Center, emphasizes that rigidity is the major concern in

patients with parkinsonism, and that if neglected it results in crippling deformities and disabilities. He declares that the deformities and disabilities are not due to rigidity of the muscles *per se*, but rather are consequences of an atrophy of disuse that has been brought about by a failure to exercise the rigid muscles. Thus, there is a vicious circle causing greater atrophy and eventually fibrosis, with contracture and deformity of the affected parts.

The New York physician states that there are few diseases in which the personal effort of the patient plays such a vital part in the treatment. Particularly in stationary phases of the disease, work, exercise and various other forms of physical activity are more important than physiotherapy and medication.

He proposes certain basic rules for the patient with Parkinson's disease. He must lift his toes upward with each step. When walking or turning, he must keep his legs 12 to 15 inches apart. For greater safety in turning and to prevent falling, the patient should take short steps, with his feet widely separated. To overcome fear of close places, he should practice walking into tight corners of the room. He should practice rapid, short excursions backward, forward, to the right and to the left, in an effort to maintain good body balance. He should swing his arms forcefully as he walks. In getting out of a chair, he should move rapidly, but in sitting down he should move slowly, with his body bent forward. The patient should be encouraged to do as much for himself as he can, and his family should assist him only in activities that he is entirely incapable of doing unaided.

He should carry out special exercises designed to prevent contractures of the neck, shoulder, fingers, adductors of the thigh, and knees and ankles. He can prevent difficulties in speech by forcefully using his lips in talking and by reading aloud. Writing difficulties can be minimized by frequent practice with a blackboard and a scratch pad.

Even in advanced cases, every effort should be made to keep the patient mobilized, and to restore and conserve function. The doctor should see the patient frequently—at least once a month, if possible—to bolster his morale, to encourage him to remain active, and to advise him in his efforts to overcome his specific difficulties.

IMS ANNUAL MEETING

Fort Des Moines Hotel

April 7-10, 1963

* Martin, J. P., Hurwitz, L. J., and Finlayson, M. H.: Negative symptoms of basal ganglion disease. *LANCET*, 2:1-8, (July 7) and 2:62-66, (July 14) 1962.

** Doshay, L. J.: Method and value of exercise in Parkinson's disease. *NEW ENGLAND J. MED.*, 267:297-299, (Aug. 8) 1962.

Regional Enteritis

Regional enteritis is a disease of the small intestine which occurs mainly in young adults. It is ordinarily limited to the distal portion of the ileum, but it may involve any region of the intestinal tract. The characteristic lesions are granulomatous and ulcerating, and are accompanied by necrosis and scar-tissue formation. The clinical course is usually progressive and chronic, or there may be exacerbations and remissions. As the disease progresses, complications are frequent and surgical intervention is frequently necessary.

The individual physician sees few patients with regional enteritis, and it is helpful to him to have the benefit of the experience of physicians in medical centers who have treated a large number of patients with the disease. A group at the Mayo Clinic* has recently made a study of all patients who underwent abdominal operations for regional enteritis there during the 11-year period 1945-1955, inclusive.

In that length of time, 257 patients with regional enteritis underwent abdominal operations at the Mayo Clinic. They were as evenly divided between the sexes as possible—129 males and 128 females. The youngest patient was 10 years of age; the oldest was 71 years old; 65 per cent were under 31 years of age; and only six patients were past 50 years of age. Ninety-one of the 257 patients had had no general abdominal procedures prior to their initial definitive surgery at the Clinic. Of the 166 patients who had had previous abdominal operations, 42.3 per cent had had definitive surgical treatment, either a by-pass procedure, a resection or both. In this group who had had previous surgery, the preoperative diagnosis had been acute appendicitis in 65 (39 per cent), regional enteritis having been discovered at the operation. In 25 of the patients who had undergone appendectomy, a fecal fistula or abdominal abscess had developed following the operation.

In the group of 257 patients subjected to abdominal surgery, the indication for operation was intestinal obstruction in 120; abdominal mass in 92; internal fistula in 40; external fistula in 36; malnutrition and a down-hill course on medical management in 24; perforation in 8; hemorrhage in 2; and miscellaneous conditions in 4 patients. Of the 91 patients who had had no previous abdominal surgery, the indications for operation were significantly different from those in the 166 who had had previous abdominal surgery. There were fewer patients with fistulas, and the percentage of patients operated upon because of failure to maintain a normal nutritional state was much higher. The average duration of symptoms in those who had had prior surgery was 5.5 years. Among the 91 patients who had not had abdominal surgery prior to definitive treatment at the Clinic, the average duration of symptoms was 3.3 years.

* Barber, K. W., Waugh, J. M., Behrs, O. H., and Sauer, W. G.: Indications for and results of surgical treatment of regional enteritis. *ANN. SURG.*, 156:472-482, (Sept.) 1962.

In the group of 91 patients who had no previous surgery, 19 (21 per cent) required a second operation because of recurrence; six patients required a third operation; and two of the group were operated upon a fourth time. The five-year follow-up study of the 91 patients revealed that two of them died in the postoperative period; seven died during the follow-up period; and five could not be traced. Among the 77 surviving patients, 65 were in good health; eight were in fair health; and four were in poor health.

In the group of 166 patients who had had previous surgery and were operated upon at the Clinic, 30 required an additional operation because of recurrence; nine required an operation because of a second recurrence; and two underwent surgery because of a third recurrence. The follow-up study covering at least five years, and averaging 10 years, showed that six patients had died postoperatively; 19 had died during the follow-up period; and 13 could not be traced. Of the 128 patients followed, 101 were in good health; 21 were in fair health; and six were in poor health.

The criteria for the diagnosis of a recurrence of the disease consisted of: (1) failure to maintain normal weight; (2) a nutritional state that failed to respond to intensive medical management; and (3) the presence of gastrointestinal bleeding, abdominal fistulas or masses. Roentgenologic confirmation of the diagnosis was required. The authors pointed out that not all patients with recurrence following operation required a second operation. Some could be controlled by medical means, and surgery could be reserved for the treatment of complications.

According to the Mayo group, the natural course of regional enteritis is one of progression to a chronic phase, with many associated complications, most of which require surgical treatment. The treatment of choice is conservative resection, with end-to-end anastomosis, and in their judgment the patients should be operated upon earlier than is the common practice—before perforation occurs. The removal of high-lying skip lesions, or radical excision of bowel, isn't ordinarily necessary, and every effort should be made to conserve the ileocecal valve and proximal ascending colon.

Fatal Accidents and Elderly Drivers

In a study made recently by the Iowa State Highway Commission and the State Department of Public Safety of fatal auto accidents in 1961, it was found that 455 (58.3 per cent) of the 780 drivers had been at fault. Of the drivers under 25 years of age, 64.4 per cent were blamed; of those between 25 and 64 years of age, 64.4 per cent were blameworthy; and of those 65 or more years of age, 70.7 per cent were judged responsible. Sixty-five thousand Iowans beyond 70 hold current drivers' licenses, and 7,000 of them are beyond 80 years of age.

President's Page

Nineteen sixty-three, I certainly hope will be a productive, satisfying and enjoyable twelve months for every member of the Iowa Medical Society, and I want to extend my best wishes for the New Year to all of you.

Surely, it will be a busy year for organized medicine in Iowa. The state legislature is to convene on January 14, the Congress is to resume work on about the same date, and both of those bodies will be considering measures of vital interest to all physicians. I urge all of you to follow developments carefully, and to stand ready to present the doctors' point of view to the lawmakers from your respective districts whenever necessity requires or opportunity offers.

Particularly to physicians who are IMS committee chairmen from whom reports are expected, or who will have resolutions for presentation to the IMS House of Delegates, I want to issue a special reminder. The IMS Annual Meeting is to be very early this year—April 7-10, and the deadline for submitting committee reports for publication in the *HANDBOOK OF THE HOUSE OF DELEGATES* has had to be set at February 1—fifteen days earlier than usual.

Resolutions to be presented to the House of Delegates are, for the first time, also to be printed in the *HANDBOOK*, and should also be at the IMS headquarters office no later than February 1. Of course resolutions can be submitted later, for distribution to the delegates in mimeographed form at the start of the meeting, but members of the various county medical societies will recognize the definite advantage of getting their proposals into the *HANDBOOK*, so that they can be studied and discussed thoroughly before they are acted upon.

A handwritten signature in cursive script, reading "George H. Scanlon". The signature is written in dark ink and is positioned above the title "President".

President



Free Floating Pigmented Cyst In the Anterior Chamber

RALPH L. HADLUND, M.D.

Waterloo

A FREE-FLOATING CYST of the anterior chamber is a rare occurrence. Businelli reported the first case of a free-floating pigmented cyst in the anterior chamber in 1868. Subsequent to that time, approximately 40 cases have been reported in the literature.

The cysts are characterized as either solid or cystic and translucent. They are usually brownish or light yellow in color, and are spherical or kidney shaped. The pigmented bodies float freely in the anterior chamber, and settle by gravity to the most dependent part of the eye. The cyst may collapse and reform spontaneously.

There are numerous theories as to the origin of these cysts, the most common being: (a) from remnants of the pupillary membrane (Apetz), particularly the solid type; and (b) from detached flocculi at the pupillary margin (Fuchs), with reference to the cystic type.

Most authors conclude that the cysts are congenital in origin, that in the majority of cases they are asymptomatic, and that no treatment is indicated.

Bock (1888) recorded that the cyst wall, in his patient's case, was composed of several layers of cells resembling posterior epithelial cells of the iris, a finding corroborated by Lewis (1932) and Evans (1936). Other reported pathologic findings include tissue similar to iris stroma, and a clear vesicle having no definite structure, and containing an aggregation of pigment granules.

REPORT OF CASE

R. A. C., a 20-year-old Caucasian male, first came to me in October, 1961, complaining of a "worm"

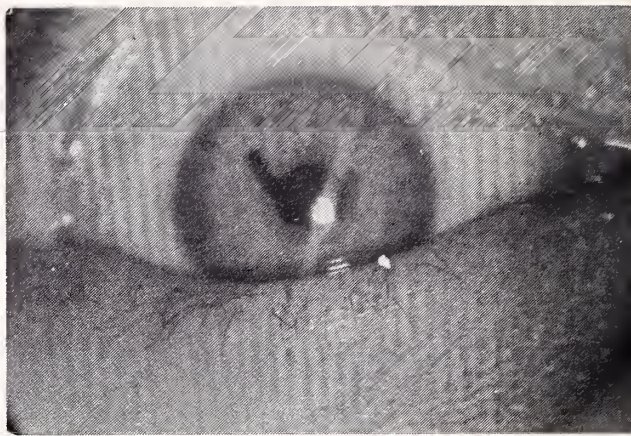
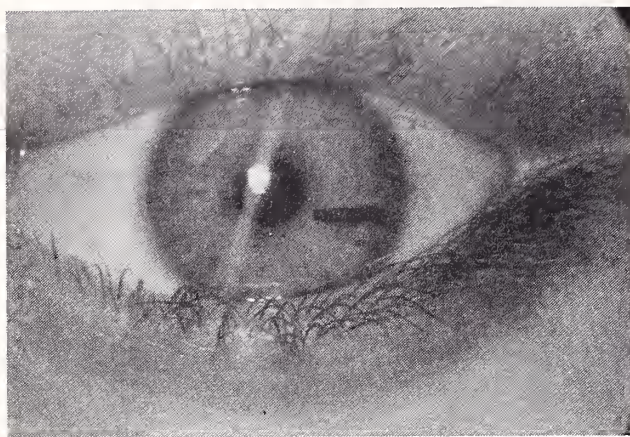
in his right eye. He had been aware of a gradually enlarging pigmented cyst in his eye for 10 years, and it had frequently floated across the visual axis, obscuring his vision momentarily. A physician whom the patient had consulted previously, William LaMotte, Jr., M.D., of Wilmington, Delaware disclosed in a letter that in December, 1959, the cyst had measured 3.0 x 0.5 mm.

Ocular examination, upon the patient's admission to the hospital, revealed that his visual acuity in each eye was 20/20 without correction. The left eye appeared normal in all respects. The right cornea was clear, and the anterior chamber was deep. A free-floating, translucent, dark brown cyst approximately 1.0 x 4.0 mm. was lying in the inferior angle. Upon motion of the eye, this cyst would float freely about the anterior chamber and then settle with gravity. The iris was normal in structure and appearance. No cysts were noted around the pupillary border, and the lens was clear. The filtration angle and ciliary body appeared normal when examined with a Goldman three-mirror gonioscopy.

On January 26, 1962, the cyst was removed under local anesthesia. A fornix-based conjunctival flap was prepared superiorly, a limbal groove was made, and one corneoscleral suture was preplaced. The anterior chamber was entered ab externally, and the incision was enlarged with scissors to a length of 4 mm. When the incision had been made, the cyst floated into the wound and ruptured as the wound edges were closed. All remnants of the cyst were washed from the anterior chamber without inserting any instruments into the chamber. The preplaced suture was then tied, and the conjunctival flap was sutured over the wound.

The patient's recovery from surgery was uneventful, and three weeks later the unaided visual acuity in his right eye was 20/20.

Laboratory examination of the tissue removed at surgery revealed a pigmented fleck of crumpled



Figures 1 and 2. Two views indicating different positions of the cyst in the anterior chamber.

tissue that was too thin to section. Microscopic examination revealed a clump of pigmented granules.

The final examination of this patient was on June 12, 1962, at which time his visual acuity was 20/20. Gonioscopic examination revealed no evidence of residual cyst or pigment deposit.

In summary, this has been a report of a case of a free-floating pigmented cyst of the anterior chamber in an eye without previous evidence of injury or disease. The cyst was removed without complication.

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1962—A Year of Medical Development

The year 1962 was one of vast development in a wide field of medical sciences, a poll of the specialty sections of the American Medical Association has revealed.

There may, in fact, have been several "break-throughs"—but because of the growing complexity and intertwining of medical knowledge it could take some time to uncover these.

This was nowhere better exemplified than in the field of genetics where, in the footsteps of Drs. F. H. C. Crick, M. H. F. Wilkins and J. D. Watson, this year's Nobel Prize winners in medicine, the long-heralded breakdown of the genetic code is firmly underway. Breaking the code could be a gigantic step into the future for medicine, but first more knowledge will have to be developed.

The code, intertwined in a thread-like molecule of deoxyribonucleic acid (DNA), dictates all growth and life functions from the nucleus of every living cell.

It is reasoned that if this molecule is out of

kilter, it may create a chemical imbalance in the body, leading to defects or weaknesses. If an individual's code could be studied, then discovery of such imbalances might be possible and corrections might be made, perhaps by drugs or perhaps by juggling the code itself.

But knowing the code is not enough. There must also be an understanding of other complex unknowns of body chemistry, and such understanding will probably require more years of research.

Advances in genetics, however, were not only in the field of deciphering DNA's code. Dr. Robert Guthrie of the University of Buffalo devised a blood test to determine at birth whether an infant suffers from phenylketonuria (PKU). This disease, caused by a chemical imbalance, prevents the body from breaking down certain food acids which can cause irreparable brain damage. If this abnormality is discovered early enough, damage can be averted through control of the diet.

Another development which may lead to a gen-

eral breakthrough in medicine was the discovery for the first time of a drug capable of curing a virus disease. Until now, such diseases could only be prevented by vaccines. At the AMA annual meeting in Chicago, Dr. Herbert E. Kaufman of the University of Florida offered proof that application of the drug 5-iodo-deoxyuridine kills off the herpes simplex virus which invades the cornea of the eye and may cause blindness.

Viruses work their destruction within living cells. Until now the only way to eliminate such viruses was to destroy the cells, and in doing so to cause as much harm as the virus. But Dr. Kaufman's findings offer hope that other virus cures will be found.

Another developing field in 1962 was that of medical transplants—replacing worn and diseased human parts with those of another person. The stumbling block to such operations has always been the body's usual refusal to accept the tissues of another person, unless that person were an identical twin. Attempts to break down this reaction by heavy radiation or extremely strong drugs have been partially successful, but such methods often produce harm.

Proof in 1962 that the thymus gland is the seat of the body's defense mechanism, which rejects transplants, triggered hope that in the not too distant future manipulation of the gland and its secretions may make possible successful transplants. Although some success has been achieved with kidney transplants, the only consistent success has been with cornea transplants, where there is practically no blood supply and thus no built-in immunity.

New technics also spurred advances in other fields of surgery. Specialists developed two methods of stimulating failing hearts. One process uses an electrical shock to make the heart continue beating. Another uses chemical stimulators, implanted within the heart muscle.

Also several methods were devised to increase the flow of blood to the heart muscle. It was found that bits of spleen, which are rich in blood vessels, will take root when grafted to the muscle and thus increase the supply. Also pioneered was the diversion of a chest artery to the heart muscle.

Significant in the field of ear surgery was development of surgical means for replacing vital middle ear parts with plastic or stainless steel.

Hypothermia, cooling of the body, was given wider use by surgeons during the year, particularly when operating on vital organs such as the heart and brain. Super cold, at nearly 400 degrees below freezing, became a medical tool during the year. Using a hollow, needle-like device at this temperature, Dr. Irving S. Cooper of New York City freezes a small area deep within the brain. By this means he is able to stop the tremor and rigidity associated with Parkinson's disease.

Another freezing technic, devised by Dr. Owen

Wangensteen of the University of Minnesota, showed promise in the treatment of peptic ulcers. A balloon with tube attached is placed in the patient's stomach and inflated with a coolant.

Meanwhile, experiments with dogs may open the way to other surgical technics aimed at curing cancerous organs, ulcers and other ills. It was shown that stomachs, spleens, intestines and other organs could be taken out of dogs, given radical treatment even with radiation that otherwise would kill the dogs, and reimplanted.

As in preceding years, much of the effort in drug development was directed at cancer. No one drug proved completely successful, but several—notably thio-tepa, Methotrexate and 5-fluorouracil—may point the way toward possible breakthroughs in the field.

Some gains were noted with the use of super-toxic doses of drugs—doses which normally would be fatal. It was found that these could be used in certain sections of the body if these sections were "tied off" from the regular blood supply and kept alive with heart-lung machines.

Another drug—ethionamide—showed its merit in fighting tuberculosis, especially in view of the increasing resistance by the tubercle bacilli, which causes the disease, to present medications.

Other developments included new type penicillins more efficient against drug-resistant bacteria and less likely to cause allergic reactions in patients.

There were also several "pluses" in the field of vaccines. The new measles vaccine was showing good results in field tests, although it is not yet on the market. Also, the way was possibly open for development of a German-measles vaccine, with isolation for the first time, of the rubella virus. This disease, if contracted by a mother in early pregnancy, may result in the birth of a defective child.

Also developed and being tested is a vaccine which promises success in malaria immunization.

The Sabin oral polio vaccine got its first wide-scale use, and by year's end had created somewhat of a storm. There were reports of a few cases of type III polio following inoculation with the Sabin type III vaccine. However, Dr. Albert Sabin said his studies showed no evidence that the cases were linked with his vaccine. At any rate, the incidence of polio appeared headed for an all-time low.

Public health in 1962 was less concerned with breakthroughs than with breakdowns. Smallpox created a scare and brought to light the fact that millions in America probably have no immunity to the disease. Taking note of the "dangerous low" in smallpox protection, the AMA urged physicians and their patients to help rebuild the nation's level of immunity to the disease. Venereal disease, supposed to be on its way out five years ago, was making a strong comeback, as was tetanus, an easily preventable disease.

THE DOCTOR'S BUSINESS

The Retirement Act of 1962

HOWARD D. BAKER

Waterloo



Enactment of the Self-Employed Individuals Tax Retirement Act of 1962 was recently announced, and since its passage there has been a flurry of interest among physicians who are anxious to avail themselves of its promised advantages right away.

THERE IS NO NEED TO HURRY

A new law such as this always contains a number of provisions that are capable of various interpretations, and it is unwise for anyone to guess at which one the administering agency (the Internal Revenue Service, in this instance) will choose. A few months after its enactment, an official analysis is made and regulations are formulated and published.

Since this Act didn't take effect until January 1, 1963, and since participants can take full advantage of their 1963 deductions if they initiate retirement plans at any time up to December 31, 1963, there is no need for hasty action.

"DON'T CALL ME; I'LL CALL YOU"

Without a doubt, many "promoters" of pension and profit-sharing plans for the self-employed will be working aggressively, even before publication of the final regulations. If you are approached by such an individual, don't let him stampede you into action. There will be ample time after the rules have been announced, and after a 10-year wait, a few more months won't be critical.

SOME BASIC CONSIDERATIONS

The two most important decisions for you to make, at this time, are:

1. "Am I in a position to make the required investment each year, and to forego the use of the accumulated funds for an extended period?" Generally speaking, participation in a plan under this Act will require an annual investment of \$2,500, and will require that the accumulation remain intact until you reach 59½ years of age. Regardless of tax savings, if you are not in a position to make

such a commitment, this kind of plan will serve no useful purpose for you.

2. "How much will such a plan cost or save me?" This question should be answered thoroughly and in detail. You should consider the contributions that you will be required to make on behalf of your employees, the expense of establishing the program, the costs of administering it each year, and the final costs of liquidating it.

When you have found out that a plan is feasible, then you must decide what sort of plan is most advantageous for you. Generally speaking, a pension plan requires a fixed annual contribution, whereas a profit-sharing plan permits some flexibility of contributions. On this basis, profit-sharing plans seem likely to be preferable, if the regulations governing them parallel those controlling the profit-sharing pension plans of corporations.

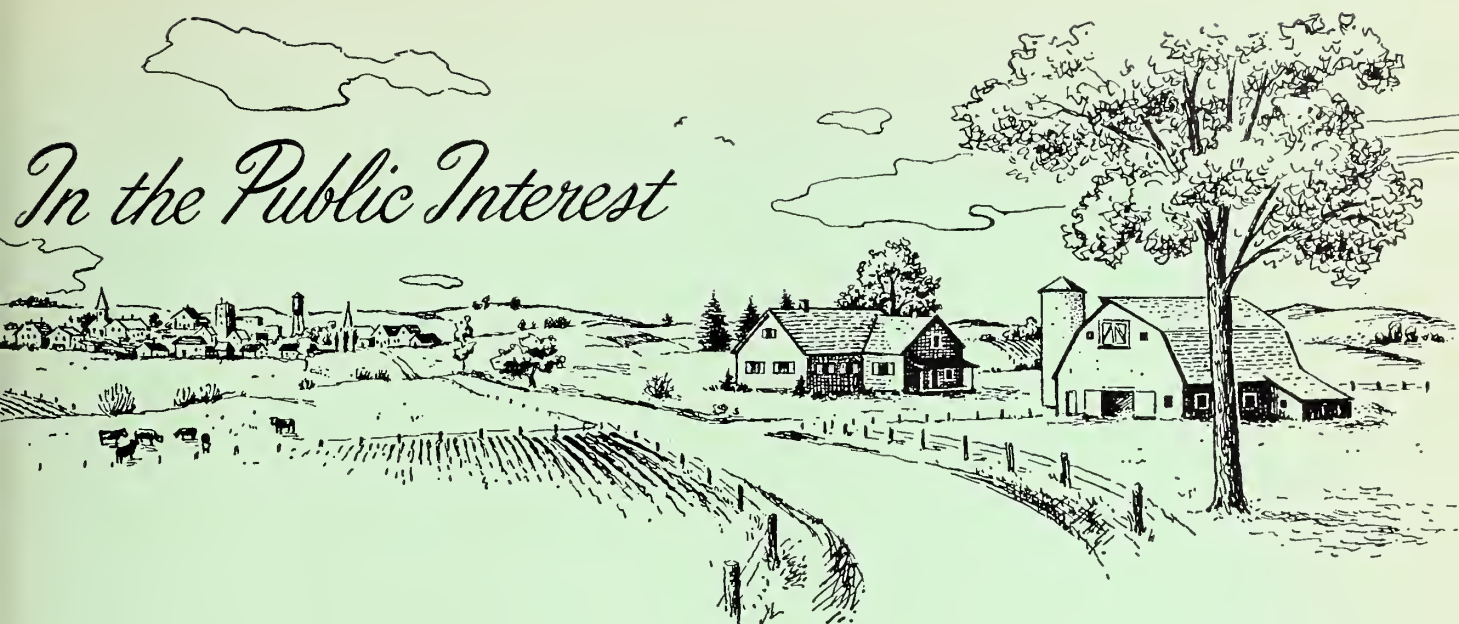
Since one of the major tax-saving devices is to be the deferral of taxes on the earnings of the fund, as opposed to deferral of taxes on the limited contributions, it would seem that one should choose the investment medium offering maximum growth. It would appear that any "fixed-dollar" accumulation plan such as insurance, annuities or bonds would offer only a minimum tax advantage. But a choosing among the investment media should be postponed until the interpretive and administrative regulations have been issued.

SUMMARY

Thus, it is our feeling that you should postpone action until you have been told all of the rules, and until you have made a careful and thorough study of your particular needs. Waiting a few months won't cost you anything.

Rather than submit to the confusion of having several random proposals submitted to you by salesmen who are primarily interested in their own commissions, why not first have an impartial study made of your situation and of the various plans that are available? Then you can approach the salesman who can offer you what you want and need!

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.



In the Public Interest

Iowa Health Groups Are Finding New Avenues for Cooperation

Doctors of medicine and the other professionals in the field of health care have always striven, as individuals and as members of their separate organizations, to safeguard or to restore the health of their fellow citizens, but they are now joining their societies in order to promote endeavors— independent or, where necessary, governmental—to prevent illness and improve the care of the sick. New media and new projects for interprofessional cooperation are being developed in rapid succession.

THE IOWA INTERPROFESSIONAL ASSOCIATION

The first grouping of representatives of health professions in this state, the Iowa Interprofessional Association, was founded as far back as the 1930's, and its members at present are the Iowa Medical Society, the Iowa Dental Association, the Iowa Veterinary Medical Association, the Iowa Pharmaceutical Association, the Iowa Nurses Association and the Iowa Hospital Association, the personnels of which total somewhere in the neighborhood of 10,000. Until recently the IIA was active principally at the state level, holding meetings once or twice a year and enlisting support for projects through the local chapters of its member societies. Now, however, the doctors, pharmacists, dentists, nurses, veterinarians and hospital administrators have begun setting up similar composite organizations in some of the counties, and expect to establish more of them.

Originally, the IIA was a means of enlisting interdisciplinary support for undertakings of special concern to professionals in just one or two of the health fields. There were many of these. The

dentists wanted fluoridation of public water supplies (to prevent tooth decay, it should be noted, rather than to put money in their own pockets). The veterinarians, just as unselfishly, sought support for their efforts to eradicate brucellosis, bovine tuberculosis and other diseases transmissible from animals to man. The doctors were anxious to prevent the passage of laws that would dangerously restrict the use of animals for laboratory research. Through the IIA, the health professions united in support of these and similar points of view.

Beginning two or three years ago, however, the IIA has rapidly become something more than a forum for the exchange of opinions. It has started projects that are of equal concern to all of the member professions. During the recent Cuban crisis, in cooperation with the State Office of Civilian Defense, the IIA has reactivated the county committees it first established three years ago to lead at the local level in providing care for people injured in a nuclear attack, or in a tornado, fire, train wreck or other lesser catastrophe. In each of the 99 Iowa counties, a doctor of medicine is the chairman, and representatives of all of the other five professions have agreed to serve. Virtually complete listings of these committees were published on pages 810-814 of the December, 1962, issue of the *JOURNAL OF THE IOWA MEDICAL SOCIETY*.

A noteworthy example of the preparations being made locally for the care of mass casualties can be found in the article "Color Coding in Disaster Planning," from the Park Hospital and Clinic at Mason City, which appears on pages 1-4 in this

(January, 1963) issue of the JOURNAL. The techniques described, or modifications of them, will facilitate the diagnosing of accident victims' difficulties and the routing of patients to physicians and other personnel best trained and equipped to care for them with a minimum of delay and confusion.

Since these activities will be efficient only if they are tried out frequently, the IIA urges the county disaster-care committees to conduct "dry runs" every few months, just as fire drills are performed in schools and hospitals. These are necessary precautions, both in peace and war!

Another project for which all of the health professionals have seen a great need is the recruitment of young people. The IIA has prepared and printed a brochure detailing career opportunities in all of the member organizations' fields, and is making copies of it available to high school students. It set up booths at recent meetings of the Iowa Education Association to introduce the booklet to teachers—in particular to academic and vocational counselors in the high schools—and at the Iowa State Fair it has put it directly into the hands of as many young people as possible.

A second interdisciplinary group with which Iowa doctors are working is the Joint Council on Care of the Aged, where physicians, dentists, nursing-home operators and hospital administrators are represented. The Joint Council gathered data for use at the White House Conference on Aging that was held a year ago this month, and since then it has continued its efforts to collect information about the numbers and the needs of the elderly Iowans who cannot provide altogether satisfactorily for themselves.

During recent months, both the Iowa Interprofessional Association and the Joint Council on Care of the Aged have been means for a continuing exchange of ideas and for reaching agreement among professionals in the health fields about the best way of helping elderly people meet their health needs. The seven organizations in these two groups are united in advocating medical aid to the near-needy aged through an immediate implementation of the Kerr-Mills Act in Iowa and most of them prefer the use of a fiscal-agent mechanism. Under such an arrangement, the State Department of Social Welfare would have final authority regarding the eligibility of applicants for assistance, but claims from those who provide health-care services to them would be paid through a non-governmental instrumentality such as Blue Cross-Blue Shield.

DOCTORS OF MEDICINE AND OSTEOPATHIC PHYSICIANS AND SURGEONS

For about a year and a half, a group known as the M.D./D.O. Liaison Committee has met frequently to facilitate cooperation between doctors of medicine and osteopaths with comparable training and modes of practice. Under a plan approved

by the Iowa Medical Society's House of Delegates and the governing body of the Iowa Society of Osteopathic Physicians and Surgeons, doctors of medicine may cooperate in the care of patients with osteopaths who are fully licensed to practice medicine and surgery, who have been endorsed for such cooperation by ISOPS, and who have been approved both by the medical societies of the counties where they work and by the IMS Judicial Council. The use of this recognition procedure started two months ago.

The osteopaths have always been a comparatively small group, and since doctors of medicine refused to teach in their schools as long as the "osteopathic lesion" and other scientifically undemonstrable theories were insisted upon, the colleges of osteopathy became undesirably inbred. It is hoped that Iowa may soon have a composite licensure board for these two professions, empowered to assess the instruction given at the medical and osteopathic schools where the candidates for licenses have received their training, and that doctors of medicine may begin taking some of the teaching posts in the osteopathic colleges.

M.D.'S AND GOVERNMENTAL HEALTH DEPARTMENTS

Cooperation between doctors of medicine and the Iowa State Department of Health doesn't constitute news, for it has always been good. But it is being stepped up. With teaching materials provided by the federal Department of Health, Education and Welfare, physicians and the State Health Department's public health nurses began last winter to instruct groups of citizens in medical self-help, with the aim of eventually having one or more trained people in each household to care for the injured and/or to attend women in childbirth in case death-dealing nuclear radiation, impassable roads or some other difficulty prevents physicians from rendering such services. As of June 30, 1962, the course had been given to 62 classes throughout the state, or to a total of 1,250 enrollees. Those figures are small, but the project had been under way for no more than four months at the end of last June.

The State Health Department recently established a Division of Health Mobilization, and hired a man to head it. The new Division is to start operation immediately, and one of its responsibilities will be to coordinate and promote instruction in medical self-help. Additional physicians will be needed as instructors.

Space doesn't permit mention of all the other undertakings in which doctors of medicine are working with governmental agencies and private groups, but one of the newer and more noteworthy of them is the experimental "homemaker service" in Polk County, where the other participants are the City-County Health Department and the Des Moines Council of Social Agencies.

New projects of all these sorts are being initiated every year, and Iowa doctors are glad to cooperate in them.

THE JOURNAL *Book Shelf*



BOOK REVIEWS

FUNDAMENTAL SKILLS IN SURGERY, by *Thomas F. Nealon, Jr.*, M.D. (Philadelphia, W. B. Saunders Company, 1962. \$8.50).

In the preface to his text, the author tells that descriptions of most of the simple technical procedures which the embryonic physician or surgeon is expected to perform are scattered about in the literature. His purpose—and he has accomplished it quite admirably—is to assemble directions for these procedures in one volume, along with many useful little tricks.

This book on fundamental skills includes chapters on "Care of the Surgical Patient," "Instruments," "Operating Room Conduct," "Sutures," "Dressings," "Anesthesia," "Trauma," "Infection," "Burns," "Minor Surgery of Skin and Superficial Tissues," "Infants and Children," a number of chapters on "Regional Body Problems," "Circulation and Electrolytes," etc. The book is well illustrated by drawings and photographs.

This volume should be helpful to any surgeon, but is a must for internes, surgical residents and general practitioners.—*Ralph A. Dorner, M.D.*

AN ATLAS OF HEAD AND NECK SURGERY, by *John M. Lore, Jr.*, M.D. (Philadelphia, W. B. Saunders Company, 1962. \$25.00).

Dr. Lore is an otolaryngologist with considerable formal training in general surgery. The text includes operative procedures that under special circumstances might be considered general surgery, ophthalmologic surgery, otolaryngologic surgery, plastic surgery, neurosurgery or vascular surgery. An attempt is made to encompass in one volume all such related procedures of the head and neck.

The value of such a work must be judged on the basis of the accuracy of the text and the technical competency of the illustrations. Both, in this case, are excellent. The ATLAS includes sections on anatomy and general and specific operative procedures. The illustrations by Robert Wabnitz, director of medical illustrations at the University of Rochester Medical Center, Rochester, New York, are accurate representations of the anatomy involved, and understandable delineations of the operative steps.

The author, the artist and the publisher are to be commended for this handsome volume. You will find the ATLAS a tangible aid in your head and neck surgery. —*John T. Bakody, M.D.*

CLINICAL DIAGNOSIS BY LABORATORY METHODS, THIRTEENTH EDITION, by *Israel Davidsohn, M.D.*, and *Benjamin B. Wells, M.D., Ph.D.* (Philadelphia, W. B. Saunders Company, 1962. \$16.50).

This standard textbook enters its thirteenth edition as an endeavor of multiple authorship. Yet, it retains the excellent depth of application to clinical medicine, as well as an orderly manner of presentation.

The usual and expected subjects are adequately presented, and besides, some new subjects have been added, ones which will provide the reader with further tools for clinical application. Among these are the use of statistics, a consideration of isotopes, and a discussion of hospital epidemiology.

The text is well written, the bibliography is entirely adequate, and the format is good. In my opinion, this classic continues to be the best in its field.—*Marion E. Alberts, M.D.*

GYNECOLOGY, by *Langdon Parsons, M.D.*, and *Sheldon C. Sommers, M.D.* (Philadelphia, W. B. Saunders Company, 1962. \$20.00).

This large and very inclusive reference text on gynecology is unique in several respects. It is the product of the joint efforts of a seasoned and experienced gynecologist and teacher and a general pathologist.

It has a refreshing approach in that it divides the material into seven "ages of women," beginning with infancy and childhood, and concluding with the post-menopausal era and geriatric gynecology. This arrangement necessitates a certain amount of repetition and increases the size of the book, of course, but I think it adds materially to its usefulness as a reference text.

The authors have very wisely included a section on marriage counseling which is excellent. It is refreshing to see adequate recognition given to this very important phase of medical practice. The general practitioner as well as the gynecologist will find this section extremely useful.

The presentation of information on clinical disorders in question-and-answer form facilitates the presentation of a maximum amount of data in a minimum of time. The busy and harassed private practitioner will especially appreciate this feature.

The authors have wisely included a very complete discussion of tumors and diseases of the breast. Certainly, whether he actively treats breast tumors or not, the gynecologist is in a position to examine and evaluate more breasts than is a member of any other segment of the profession.

The problems of the geriatric gynecologic patient

are approached in a positive rather than in a negative manner. The author's feeling that everything possible should be done to enable such a woman to enjoy life to its fullest, regardless of her age, will be warmly assented to by all experienced clinicians.

This book is large, it is expensive, and to some extent it is repetitious. It will be of limited value to the average general practitioner, but certainly it belongs in every medical library.—*Cecil W. Seibert, M.D.*

BOOKS RECEIVED

SYNOPSIS OF ROENTGEN SIGNS, by *Isadore Meschan, M.D.*, with the assistance of *R. M. F. Farrer-Meschan, M.D.* (Philadelphia, W. B. Saunders Company, 1962. \$11.00).

BEDSIDE DIAGNOSIS, SIXTH EDITION, by *Charles Seward, M.D.* (Baltimore, The Williams & Wilkins Company, 1962. \$7.00).

MEDICAL RESIDENT'S MANUAL, by *Frank B. Flood, M.D.*, *Richard J. Kennedy, M.D.*, and *William J. Grace, M.D.* (New York, Appleton-Century-Crofts, Div. of Meredith Publishing Company, 1962. \$4.95).

HARE-LIPS AND THEIR TREATMENT, by *A. B. LeMesurier, M.D.* (Baltimore, The Williams & Wilkins Company, 1962. \$7.00).

SYNOPSIS OF GENITOURINARY DISEASE, SEVENTH EDITION, by *Austin I. Dodson, Jr., M.D.*, and *J. Edward Hill, M.D.* (St. Louis, The C. V. Mosby Company, 1962. \$7.75.)

Coming Meetings

(Continued from page 33)

- May 23-25 **International Society of Colon and Rectal Diseases**. Athens. Write: *Harry E. Bacon, M.D.*, Temple University Medical Center, Philadelphia 40
- May 28-June 2 **Second Asia and Oceania Congress of Endocrinology**. Sydney, Australia. Write: *P. J. Claringbold, M.D.*, University of Sydney
- June 2-5 **Canadian Ophthalmological Society**. Royal York Hotel, Toronto
- June 9-15 **International Hospital Congress**. Paris. Write: *J. C. J. Burkens, M.D.*, International Hospital Federations, 24/6 London Bridge Street, London, SE1

- June 14-16 **Society of Obstetricians and Gynaecologists of Canada**. Delawana Inn, Ontario
- June 23-28 **World Commission on Cerebral Palsy**. Copenhagen. Write: *P. Hoeg Albrethsen, Samfundet for Vanfore, Esplanaden 34, Copenhagen K*
- June 23-28 **International Society for Rehabilitation of the Disabled**. Copenhagen. Write the Society, 701 First Avenue, New York City
- June 27-29 **International Congress on Alimentary and Digestive Allergy**. Vichy, France. Write: *Pierre Lignon, 24 boul des Capucines, Paris 9*
- June 27-29 **Neurosurgical Society of America**. London. Write: *Courtland H. Davis, Jr., M.D.*, Bowman Gray School of Medicine, Winston-Salem, N. C.
- July 2-4 **Ciba Foundation Symposium on Cellular Injury**. London. Write: Ciba Foundation, 41 Portland Place, London W1
- July 23-27 **International Society of Chemotherapy**. Stuttgart, Germany. Write: *Clemens A. Hockethat, VA Hospital, 13th and Harrison Streets, Oakland, California*
- Aug. 9-15 **International Congress on Nutrition**. Edinburgh, Scotland. Write: *Alexander Adler, 30 Park Avenue, New York 16*
- Sept. 1-7 **International Congress on Orthopaedic Surgery and Traumatology**. Vienna. Write: *Karl Chiari, Grillparzerstrasse 14, Vienna 1*
- Sept. 2-6 **International Congress on Clinical Pathology**. Mexico City. Write: *E. Cervera B., M.D.*, Asociacion Mexicana de Laboratorio Clinico, Durango 213, Mexico 7, D.F.
- Sept. 16-20 **Ciba Foundation Guest Symposium on Mother-Infant Interaction**. London. Write: Ciba Foundation, 41 Portland Place, London W1
- Sept. 19-21 **Congress of the International Society of Cardiovascular Surgery**. Rome, Italy. Write: *H. Haimovici, M.D.*, 862 Park Avenue, New York 21
- Oct. **American Society of Plastic and Reconstructive Surgery**. Hawaiian Village Hotel, Honolulu. Write: *T. Ray Broadbent, M.D.*, Secretary, 508 E. South Temple, Salt Lake City
- Nov. 5-13 **Ninth Congress of the Pan-Pacific Surgical Association**. Honolulu. Write: *F. J. Pinkerton, M.D.*, Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13, Hawaii
- Nov. 13-Dec. 10 **First Pan-Pacific Mobile Educational Lecture Seminar**. New Zealand, Australia, Thailand, the Philippines, Hong Kong and Japan. Write: *F. J. Pinkerton, M.D.*, Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13, Hawaii

Actions of the AMA House of Delegates at Los Angeles

F. J. L. BLASINGAME, M.D., Executive Vice President

Health care for the aged, medical ethics, graduate medical education, expansion of the AMA Board of Trustees and a study of the sections and scientific program of the AMA were among the major subjects acted upon by the House of Delegates at the American Medical Association's Sixteenth Clinical Meeting held November 25-28 in Los Angeles.

In keynoting the Association's attitude toward Social Security health care for the aged, Dr. George M. Fister, of Ogden, Utah, AMA president, told the opening session of the House: "We will

not compromise on the fundamental principles in which we believe and for which we have fought in the past with courage and good judgment. We will not jeopardize our position either by indicating a willingness to consider a compromise which would damage our basic principles, or by hasty action which might be misinterpreted."

Dr. Fister urged the entire medical profession to understand the basic issues in this struggle so that they can recognize the difference between compromise and surrender. "The people will respond to the truth," he said, "and it is imperative that we

as individuals and as an organization see that they get the truth."

The House reaffirmed, without compromise or change, the Association's present policy of opposition to the King-Anderson type of legislation and support for the Kerr-Mills program. In so doing, it also approved in principle the following suggested amendments to the Kerr-Mills Law:

1. Remove the requirement that both Old Age Assistance (OAA) and Medical Assistance for the Aged (MAA) programs be administered by the same agency;

2. Provide flexibility in the administration of the income limitations proposed under state law so that a person who experiences a major illness may qualify for benefits if the expense of that illness, in effect, reduces his money income below the maximum provided;

3. Include a provision in the law requiring state administering agencies to seek expert advice from physicians or medical societies through medical advisory committees; and

4. Provide for "free choice" of hospital and doctor under state programs.

At the same time, the House also endorsed in principle four proposed amendments to the Internal Revenue Code, designed to assist in financing the medical and hospital expenses of the aged. These amendments would: liberalize tax deductions for medical expenses of dependents over age 65; remove the 1 per cent drug limitation and include drugs as medical expenses; permit taxpayers over age 65 to receive full tax benefit for medical expenses by use of the carry-forward and carry-back principle, and provide a tax credit for medical expenses paid by the over age 65 taxpayer, proportionate to the relation between his medical expense and taxable income.

The House also approved a status report which concluded with this statement: "It is our strong conviction that the legislative situation, the expanding health insurance and prepayment coverage, the improving economic status of the aged, and the many other factors cited in this report require that we face the 1963-1964 Congressional campaign without defeatism or complacency and with pride in the progress that has occurred. Finally, it is, above all, essential that our position not be undermined by the adoption of any policies that compromise our basic principles."

In considering seven so-called "pledge" resolutions involving professional freedom, the House adopted a substitute resolution urging that all physicians be encouraged to support the position taken by the House of Delegates in June, 1961. That policy statement said: "The House of Delegates invites attention to the fact that the medical profession is the only group which can render medical care under any system, and that the medical profession is best qualified to determine how the best medical care can be delivered.

"The House of Delegates believes that the medical profession will see to it that every person receives the best available medical care regardless of his ability to pay, and it further believes that the profession will render that care according to the system it believes is in the public interest and that it will not be a willing party to implementing any system which is detrimental to the public welfare."

MEDICAL ETHICS

The AMA Judicial Council submitted a report containing new opinions on the medical ethics involved in physician ownership of drug stores, drug repackaging houses and drug companies, dispensing of glasses by ophthalmologists, and advertising practices of medical laboratories. The House decided that the questions of physician ownership of drug stores, drug repackaging houses and drug companies, and the dispensing of glasses by ophthalmologists, should not be acted upon at this time. Those opinions were returned to the AMA Judicial Council for further study and report. The House approved the portion of the report relating to advertising practices of medical laboratories, and agreed that the propriety of such practices should be determined at the local level, in compliance with the new opinion. The House also approved the rules of procedure adopted by the AMA Judicial Council for disciplinary action in cases where the Association now has original jurisdiction as conferred by the June, 1962, change in the Bylaws.

INTERNS AND RESIDENTS

A special report on the compensation of interns and residents, which was published in the October 27 issue of JAMA, was presented to the House by the Council on Medical Education and Hospitals and the Council on Medical Service. The report was submitted as information only, with a request for further study, comments and suggestions. The House urged that all delegates, hospital staffs and medical societies discuss the report and forward all suggestions to the two Councils in time to influence the form of the report to be presented for action at the June, 1963, meeting.

In another action on graduate medical education, the House approved a report on internships and hospital services in which the Council on Medical Education and Hospitals recommended numerous changes in the Essentials of an Approved Internship. The House declared that "their acceptance will further strengthen the educational values of the internship and advance American medicine's contribution to worthy goals of international educational exchange."

The House modified one Council recommendation to read as follows: "In order to maintain high standards of education and better assure the patients' welfare, at least 25 per cent of the total house staff (interns and residents) of a hospital should be graduates of accredited United States

or Canadian medical schools. When United States and Canadian graduates represent a lesser portion of the house staff for two successive years, this will warrant that serious consideration be given to disapproving the internship."

The House instructed the Council on Medical Education and Hospitals to exert every possible effort and influence so that all hospitals with approved house-officer training programs accept a reasonable number of foreign medical school graduates.

AMA BOARD OF TRUSTEES

The House, by a vote of 130 to 48, adopted changes in the Constitution and Bylaws which would have implemented the June, 1962, recommendations of the Ad Hoc Committee on the Board of Trustees, including expansion of the Board from 11 to 15 members. However, the Judicial Council later informed the House that the affirmative votes necessary to amend the Constitution should have totalled at least 144, or two-thirds of the 216 voting delegates registered at the Wednesday session. The House then adopted a motion to vote on the proposed Constitutional amendments, in accord with the changes made in the Bylaws, at the opening session of the June, 1963, meeting.

SECTIONS AND SCIENTIFIC PROGRAM

A report by the Committee to Study the Scientific Sections, recommending major changes in the organizational structure and scientific program of the Association, was presented to the House by the Board of Trustees. However, because of many requests for delay in approval, the House instructed the Speaker to appoint an *ad hoc* committee composed of members of the House, and including representatives of the sections, to study the subject and report next June.

MISCELLANEOUS ACTIONS

In considering a wide variety of resolutions, and annual and supplementary reports, the House also:

Instructed the Board of Trustees to use every influence in their command to have the *Hill-Burton Law* amended in such a manner as to eliminate all categorical grants, eliminate the term "diagnostic and treatment centers" from any listings in the act, and prevent federal funds being awarded under existing law as a grant to closed-panel medical corporations to build diagnostic and treatment centers.

Declared that it is both the responsibility and duty of the AMA to submit testimony before Congress on the subject of *research appropriations* in the health field.

Urged state and county medical societies to continue promoting the aggressive, consistent development of *Blue Shield* senior citizen programs.

Encouraged medical societies and physicians to provide cooperation and leadership in the formulation and operation of regional *hospital planning* bodies.

Approved *Essentials* of Acceptable Schools for Inhalation Therapy Technicians, Cytotechnology and Medical Technology and of Approved Residencies in Pediatric Cardiology.

Recommended that a Board report and two resolutions dealing with the "*Liberty Amendment*" be re-referred to the Council on Legislative Activities for further study.

Warned against the dangerously low level of immunization for *smallpox*, and urged physicians and their patients to maintain the needed protection.

Pointed out that state and county medical societies should collaborate with departments of *public health* in the interest of community health, always keeping in mind the need for a proper balance between local public health programs and the private practice of medicine.

Authorized the Board of Trustees to investigate the feasibility of establishing a *physicians' pension plan* and to present a plan for the implementation of such a program to the House in June.

Instructed the Board of Trustees to study the feasibility of *regional clinical sessions*, taking into consideration the already established regional meetings of medical specialty groups and the Academy of General Practice.

Commended the Council on National Security and its Committee on *Disaster Medical Care* for initiating a visitation program with committees on emergency medical service of state medical societies.

Expressed appreciation and thanks to the *Woman's Auxiliary* for its impressive accomplishments in behalf of our free society.

AMA-ERF

The delegates learned from a report by the American Medical Association Education and Research Foundation that one out of every ten medical students in the U. S. is now benefiting from the new student loan program. Since its inception nine months ago, the program has granted loans totaling more than nine million dollars to 3,042 medical students and 1,787 interns and residents, with applications being received at a rate of 150 per week. It also was announced that the Merck Sharp & Dohme pharmaceutical company is making a second matching grant of \$100,000 in support of the loan fund. The AMA-ERF also received contributions totaling \$440,583 from physicians in five states for financial aid to medical schools.

REGISTRATION

Final registration at the meeting reached a total of 10,908, including 5,209 physicians.

Hearing Conservation

Hearing Aids

Nearly every physician, at one time or another, is faced with a child or an adult who has a socially-handicapping hearing loss, and for whom little, if anything, can be done medically or surgically. The question then often arises, "Would amplification help?"

Unfortunately, one can't answer that question simply by suggesting to the patient or his parents that a hearing aid be purchased or even tried. On the contrary, the decision as to whether or not a hearing aid should be suggested, as well as the selection and "fitting" of the aid itself, requires very careful thought. Ideally, it should be based on tests administered under laboratory-type conditions.

There are scores of hearing aids on the market. One aid may be better suited than another for a given patient. In fact, in many cases perhaps only one or two aids can render a substantial benefit, relatively speaking, to the patient with a hearing loss. In some cases no aid will help him, and he should be so informed.

The Committee on the Conservation of Hearing for the State of Iowa, which is presenting a series of articles in the *JOURNAL*, consults with and advises all agencies interested in the problems of hearing impairment. Its services are available to industry, agriculture, education and to the broad spectrum of public health and welfare services within the state.

The Committee has been officially sponsored by the Iowa State Department of Health since 1957. However it was first formed in 1949, and has been continuously active under the leadership of Dr. Dean M. Lierle, head of the Department of Otolaryngology and Maxillofacial Surgery at S.U.I. From the first, the Committee has been interdisciplinary in composition and purpose.

The Committee presently consists of: C. M. Kos, M.D. (chairman), otologist in private practice, Iowa City; Joseph Wolvek (executive secretary), consultant, Hearing Conservation Services, State Department of Public Instruction, Des Moines; M. G. Barillas, assistant director for Special Services Division of Vocational Rehabilitation, Des Moines, Iowa; L. E. Berg, superintendent, Iowa School for the Deaf, Council Bluffs; Dale S. Bingham, consultant, Speech Therapy Services, State Department of Public Instruction, Des Moines; Paul Chestnut, M.D., private practitioner and member of AAPG, Winterset; James F. Curtis, Ph.D., head, Department of Speech Pathology and Audiology, S.U.I., Iowa City; Madeline M. Donnelly, M.D., director, Division of Maternal and Child Health, State Department of Health, Des Moines; Joseph Giangreco, assistant superintendent, Iowa School for the Deaf, Council Bluffs; Malcolm Hast, Ph.D., Department of Speech Pathology and Audiology, S.U.I., Iowa City; Byron Merkel, M.D., otolaryngologist in private practice and member of Academy of Otolaryngology and Ophthalmology, Des Moines; William Prather, Ph.D., Department of Speech Pathology and Audiology, S.U.I., Iowa City; Mrs. Jeanne Smith, Department of Otolaryngology and Maxillofacial Surgery, S.U.I., Iowa City; Edmund Zimmerer, M.D., commissioner, State Department of Health, Des Moines.

AMPLIFICATION WON'T HELP EVERY PATIENT

A hearing aid is, of course, no more than its name implies—a device by which one's hearing is helped, but not necessarily returned to "normal." Many people are misled into thinking that a hearing aid is a panacea. If returning one's hearing to "normal" were merely a matter of amplifying sound to compensate for the degree of loss, then perhaps a hearing aid would be the final answer.

Unfortunately, degree of loss varies as a function of frequency. Since speech contains sounds within a *range* of frequencies (approximately 500 to 2,000 cycles per second), some sounds in speech stimuli may be louder, or heard better, than other sounds, the total or partial effect being that of distorted and perhaps unintelligible speech. To complicate this problem, not only does one's loss vary as a function of frequency, but the response characteristics (output) of the hearing aid itself (primarily of the receiver) will vary as a function of frequency, and some frequencies, therefore, will be amplified more than others.

It follows that, depending upon the degree and type of loss, some patients will benefit substantially more than other patients from amplification *per se*, and that such benefit is further dependent upon the specific characteristics of each hearing aid. These characteristics include not only the frequency responses, but also the acoustic gain and output, the type of receiver, and possibly various other features such as tone controls, compression circuits, receiver inserts, etc. The result is that the selection of a hearing aid requires very careful study, not only as regards amplifying sounds to the proper degree but also reproducing them in such a way that they will be as *meaningful* as possible.

HEARING-AID FITTINGS

Where, then, might a potential candidate for amplification be referred? Some otologists provide this service themselves. If they do not, they are able to refer the patient to any one of a number of "hearing centers," where hearing evaluations and "hearing-aid fittings" are performed by audiologists.

The expression *hearing-aid fitting* is somewhat of a misnomer. Actually the hearing aid is not fitted to meet the individual's specific hearing loss

to the same degree of precision that eye glasses are fitted to correct an impairment of vision. Rather, on the basis of a comprehensive hearing evaluation performed under laboratory conditions, a decision is made as to whether just one ear or both ears should be "aided." Then, from a large stock of various makes and models of hearing aids, which different manufacturers and dealers have provided to the otologist or "hearing center," several devices with various settings, receivers, etc., are tried on the patient, and each aid is evaluated by means of speech audiometry under controlled sound conditions.

Following such an evaluation, an aid or aids may be recommended to the patient. The center does not sell hearing aids; it only recommends them. The patient then visits his nearest dealer to purchase the recommended aid. Impressions for earmolds may be made at the center, or by the dealer.

COUNSELING IS ESSENTIAL

An important part of such hearing-aid evaluations is the counseling that the patient receives with respect to his or her adjustment to the aid. Advice is also given about the care to be given the device, about its proper usage, and about the need, if any, that the patient has for further remedial or rehabilitative help, such as auditory training, speech reading, etc. Often the center will have its own on-going rehabilitative programs for the hard-of-hearing, or if not, it will be able to refer the patient to someone or some organization that does.

SUMMARY

A hearing aid plays a very important role in any hearing conservation program. It is essential, therefore, that the selection of a hearing aid be given serious consideration and thought, and that the patient be given every opportunity to derive maximum benefit from his aid through proper selection, counseling, and aural rehabilitation.

Sioux Valley Medical Association Annual Meeting, Sioux City

Wednesday, February 20

Hospitality Room, Sheraton Martin Hotel

7:00 p.m. Refreshments, courtesy of Physicians & Hospitals Supply Co.
Old Time Movies; Music. *Wives expected*

Thursday, February 21

Auditorium, Nurses' Home, Lutheran Hospital

8:30 a.m. Registration

9:00 a.m. Laboratory Application of Clinical Problems—James Brown, M.D., pathologist, Sioux City; William Stanage, M.D., surgeon, Yankton, South Dakota

9:20 a.m. Control of Digitalis Intoxication—W. O. Read, Ph.D., University of South Dakota Medical School
9:40 a.m. Role of Emotional Stress in the Production of Congenital Malformation—W. F. Geber, Ph.D., University of South Dakota Medical School
10:30 a.m. Commonly Missed Medical Diagnoses—R. C. Larimer, M.D., Sioux City
11:00 a.m. Urologic Problems in General Practice—John Macfarlane, Sioux City
11:20 a.m. New Drugs in Obstetrics & Gynecology—Edward Hagen, M.D., Sioux City
11:40 a.m. Warts—Herbert Leiter, M.D., Sioux City
12:00 noon Lunch—Hospital Dining Room

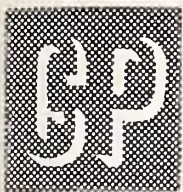
Sheraton Martin Hotel

1:30 p.m. Movie: Gastric Freezing—Department of Surgery, University of Minnesota Medical School
2:00 p.m. Office Gynecology Today—Edwin J. DeCosta, Northwestern University
2:30 p.m. Newer Concepts in Treatment of Shock, Part I—Richard Lillehei, M.D., University of Minnesota
3:15 p.m. Hysterectomy: Then and Now, When and How—Dr. DeCosta
3:45 p.m. Newer Concepts in Treatment of Shock, Part II—Dr. Lillehei
5:30 p.m. Social Hour, courtesy of the Cusack-Harmon Drug Company
7:00 p.m. Banquet—Speaker, George W. Knabe, Jr., M.D., Department of Pathology, University of South Dakota Medical School, "Project Hope in Peru."
Dancing: Darrel Warner's Orchestra

Friday, February 22

Sheraton Martin Hotel

9:00 a.m. Movie: Emotional Factors in General Practice—Geigy Pharmaceuticals
9:30 a.m. Gastroenteritis—Donal Dunphy, M.D., head of the Department of Pediatrics, S.U.I. College of Medicine
10:00 a.m. Energizers, Tranquilizers or Neither, Part I—Jackson A. Smith, M.D., clinical director of the Illinois State Psychiatric Institute, Chicago (sponsored by the South Dakota Mental Health Association).
10:45 a.m. Hiatus Hernia and Esophagitis—F. F. Paus-tian, M.D., University of Nebraska
11:15 a.m. Energizer, Tranquilizer or Neither, Part II—Dr. Smith
12:00 noon Luncheon—Panel discussion by Drs. Paus-tian, Dunphy and Smith
1:00 p.m. Movie: Ophthalmology for General Practice
2:15 p.m. Problems of the Newborn—Dr. Dunphy
3:00 p.m. Diverticulitis, a Potentially Grave Problem—Dr. Paus-tian
3:30 p.m. Movie: Office Surgery—Samuel D. Kron, M.D.



Iowa Chapter of the American Academy of General Practice

Annual Refresher Course for General Practitioners

Again for the eighth year, a Refresher Course for General Practitioners will be held at University Hospitals, in Iowa City, February 12 through 15. The Academy will grant 26½ hours of Category I credit for this course, which it is to sponsor in cooperation with the S.U.I. College of Medicine. The registration fee will be \$40 for the complete course, or \$15 per day, for non-members. Members of the AAGP will be charged a fee of \$10 for either a single day or for the entire course. Luncheon tickets are included in the non-member's fee, and AAGP members may purchase luncheon tickets for \$1 each at the registration desk.

We hope many members will take this opportunity to go back to school for the four days, and get up-to-date on the latest medical information. Again, the schedule of lectures will be well balanced and of interest to all GP's.

On Thursday night, February 14, members of the Iowa Chapter of AAGP will again be hosts to the medical students and participating faculty members at the Elks Club in Iowa City. Marion Laboratories will again sponsor the social hour at 6:30, with the usual wonderful oysters on the half shell and liquid refreshment. The speaker for the evening will be Mr. J. V. Rowe, of Waterloo, public relations representative for Sunray-DX Oil Company, and his subject will be "How'm I Doin'?" Members of the Academy may purchase banquet tickets when they register for the course.

Tuesday, February 12

8:15 a.m. Registration

8:45 a.m. Welcome and Orientation—Robert C. Hardin, M.D., dean of the S.U.I. College of Medicine; John A. Gius, M.D., director of Postgraduate Studies; and Eugene Smith, M.D., president of the Iowa Chapter of AAGP.

MEDICINE

9:00 a.m. "Air Purifiers and Ragweed Hay Fever"—P. M. Seeböhm, M.D.

9:20 a.m. "Renin, Angiotensin and Aldosterone"—F. M. Aboud, B.Ch.

9:40 a.m. Panel—Management of the Patient With a Nodular Thyroid—E. L. DeGowin, M.D.,

chairman; R. E. Hodges, M.D.; E. E. Mason, M.D.; R. D. Liechty, M.D.

10:45 a.m. "Commonly Overlooked Causes of Abdominal Pain"—W. B. Galbraith, M.D.

11:05 a.m. "Treatment of Patients With Chronic Pyelonephritis"—J. P. Sanford, M.D.

11:25 a.m. Panel—Diagnosis and Treatment of Viral Diseases—I. M. Smith, M.D., chairman; J. P. Sanford, M.D.; A. P. McKee, M.D.; E. M. Berglund, B.A.; J. M. Layton, M.D.

12:30 p.m. Luncheon

1:30 p.m. "Pulmonary Tuberculosis: Outpatient Management"—Isaac Horowitz, M.D.

1:50 p.m. "Pitfalls in Diagnosis of Allergic Contact Dermatitis"—R. M. Caplan, M.D.

2:10 p.m. Panel—New Concepts of Pathogenesis and Treatment of Congestive Heart Failure—L. E. January, M.D., chairman; J. W. Eckstein, M.D.; E. O. Theilen, M.D.; W. M. Kirkendall, M.D.

3:10 p.m. "The Problem of the Patient With Chronic Peptic Ulceration"—J. A. Clifton, M.D.

3:45 p.m. Small Group Conferences

1. Hypertension—W. R. Wilson, M.D., and Annette Fitz, M.D.

2. Renal Disease—W. M. Kirkendall, M.D., and H. L. Nash, M.D.

3. Coronary Heart Disease and Peripheral Atherosclerosis—W. C. Connor, M.D., and M. L. Armstrong, M.D.

4. Chest Diseases—G. N. Bedell, M.D., P. M. Seeböhm, M.D., and Isaac Horowitz, M.D.

5. Diabetes Mellitus—D. B. Stone, M.D., R. E. Cech, M.D., and J. D. Brown, M.D.

6. Hematology—R. F. Sheets, M.D., and Helen Vodopick, M.D.

7. G.I. and Liver—R. D. Eckhardt, M.D., K. A. Hubel, M.D., and R. B. Talley, M.D.

8. Cardioscope Demonstration—E. O. Theilen, M.D., June Fisher, M.D., and F. W. Fletcher, M.D.

Wednesday, February 13

PEDIATRICS—PSYCHIATRY—NEUROLOGY

9:00 a.m. "Difficulties in the Diagnosis of Cerebral Palsy in Early Childhood"—Gerald Solomons, M.D.

9:30 a.m. "The Adolescent and Acne"—C. E. Radcliffe, M.D.

10:15 a.m. "Vaccines and Viral Diseases"—A. J. Steigman, M.D.

- 11:00 a.m. Panel—Brucellosis—J. C. Taylor, M.D.; T. H. Kent, M.D.; I. H. Borts, M.D.; W. F. McCulloch, M.P.H.
- 12:30 p.m. Luncheon
- 1:30 p.m. Panel—Recognition and Management of Anxiety—P. E. Huston, M.D.; R. L. Jenkins, M.D.; W. S. Moeller, M.D.; J. S. Ward, M.D.
- 3:15 p.m. "Treatable Forms of Peripheral Neuropathy"—W. E. Bell, M.D.
- 3:45 p.m. "Electrodiagnostic Determinations in Clinical States"—R. W. Fincham, M.D., and M. W. VanAllen, M.D.
- 4:15 p.m. "Toxic Reactions to Drug Therapy"—A. L. Sahs, M.D.
- 8:00-9:30 p.m. Symposium on Practical Therapeutics C. E. Radcliffe, M.D., moderator, and a selected panel

Thursday, February 14

OBSTETRICS & GYNECOLOGY

- 9:00 a.m. "Current Concepts of the Management of the Pregnant Rh-Sensitized Patient"—C. P. Goplerud, M.D., and J. C. Taylor, M.D.
- 9:30 a.m. "Endometrial Carcinoma—Controversial Aspects"—W. C. Keettel, M.D.
- 10:00 a.m. "Midtrimester Fetal Death"—W. F. Howard, M.D.
- 10:45 a.m. Perinatal Mortality Conference—C. A. White, M.D., moderator; Madelene Donnelly, M.D.; Jack Moyers, M.D.; F. W. Stamler, M.D.; R. B. Kugel, M.D.; J. C. Taylor, M.D.; C. P. Goplerud, M.D.; Sharon North, R.N.
- 11:30 a.m. Recent Advances in Obstetrics and Gynecology
 "Use of 'Friedman Curve' in Evaluation of Labor"—L. J. Dunn, M.D.
 "Use of Dilute Neosynephrine in Gynecology and Obstetrics"—W. C. Keettel, M.D.
 "Evaluation of Newer Pregnancy Tests"—J. T. Bradbury, M.D.
 "Use and Abuse of Progestins"—J. P. Jacobs, M.D.
- 12:00 noon Question and Answer Period
- 12:30 p.m. Luncheon
- 1:45 p.m. "Premarital Examination"—B. M. Kretschmar, M.D., and A. S. Norris, M.D.
- 2:15 p.m. "Postpartum Psychological Problems"—John Clancy, Ch.B.
- 2:45 p.m. "Use of Sparteine in Obstetrics"—W. F. Howard, M.D., and L. J. Dunn, M.D.
- 3:15 p.m. "Appendicitis in Pregnancy"—J. P. Jacobs, M.D., S. E. Ziffren, M.D., and J. M. Layton, M.D.
- 4:00 p.m. Small Group Conferences
1. Local Anesthesia in Obstetrics—C. A. White, M.D.
 2. Incompetent Cervix—L. J. Dunn, M.D.
 3. Use of Forceps (Manikin)—W. C. Keettel, M.D.
 4. Fetal Distress, Fetal EKG—R. M. Kretschmar, M.D.
 5. Infertility—J. T. Bradbury, Sc.D., and J. P. Jacobs, M.D.
 6. Obstetrics Ward Rounds (Limited to 20)—C. P. Goplerud, M.D.
7. General Dermatologic Problems—R. G. Carney, M.D.
- 6:00 p.m. Social Hour and Dinner—Elks Club, 525 E. Washington Street—Speaker, Mr. J. V. Rowe, Waterloo, public relations representative of the Sunray-DX Oil Company: "How'm I Doin'?"

Friday, February 15

SURGERY

- 9:00 a.m. "Principles Underlying the Emergency Treatment of Acute Trauma"—R. T. Tidrick, M.D.
- 9:25 a.m. "The Management of Respiratory Problems in Acute Trauma"—W. K. Hamilton, M.D.
- 10:00 a.m. "Management of Acute Trauma to the Eye"—R. C. Watzke, M.D.
- 10:40 a.m. "The Management of Acute Trauma to the Male Genitalia"—D. A. Culp, M.D.
- 11:00 a.m. Panel—Early Treatment of Fractures of the Spine—S. E. Ziffren, M.D., moderator; C. B. Larson, M.D.; Russell Meyers, M.D.; G. E. Perret, M.D.; Michael Bonfiglio, M.D.
- 12:30 p.m. Luncheon
- 2:00 p.m. Panel Discussion (Physicians are invited to submit their surgical problems for consideration. They are asked to bring x-rays or other visual aids to illustrate them.)—J. A. Buckwalter, M.D., surgery; D. A. Culp, M.D., urology; J. A. Donaldson, M.D., otolaryngology; C. B. Larson, M.D., orthopedics; F. C. Blodi, M.D., ophthalmology; J. L. Ehrenhaft, M.D., chest surgery; G. E. Perret, M.D., neurosurgery; M. S. Lawrence, M.D., vascular surgery.
- 3:40 p.m. Small Group Conferences
1. General Surgery—J. A. Gius, M.D.
 2. General Surgery—S. E. Ziffren, M.D.
 3. Anesthesia—W. K. Hamilton, M.D.
 4. Urology (male infertility)—R. G. Bunge, M.D.
 5. Otolaryngology—J. A. Donaldson, M.D.
 6. Orthopedics—C. B. Larson, M.D.
 7. Ophthalmology—P. J. Leinfelder, M.D.

Have You Informed Us of Your Change of Address?

Postal regulations on second class mail have become more stringent. Under a new ruling, we must pay ten cents per piece for undeliverable second class mail, but worst of all, if you don't happen to reside or practice at the *precise* mailing address which we have for you, your JOURNAL will not be delivered. We urge promptness on the part of all JOURNAL readers in notifying us of address changes!

Iowa Association of Medical Assistants

AMA Commends AAMA

Physicians really do appreciate the work of their medical assistants. They even appreciate their official organization.

To prove it, members of the American Medical Association's House of Delegates at the 1962 Clinical Meeting in Los Angeles officially patted medical assistants on the back and offered to support their organization.

A special resolution spelled out the thanks of the medical profession. This resolution stated that the AMA appreciated the work of the American Association of Medical Assistants "for the dedicated and unselfish assistance and work in the combined goal of the two organizations in continually striving to improve the character of medical standards."

Further, the AMA resolution emphasized that the AMA "wholeheartedly endorses the program and functions of the American Association of Medical Assistants and encourages every physician who has in his employ or under his supervision medical assistants who are eligible for membership in the American Association of Medical Assistants to urge all these assistants not only to join the American Association of Medical Assistants but to actively participate in their programs."

The above resolution was presented to the AMA House of Delegates and passed on November 28, 1962. The Iowa Association of Medical Assistants greatly appreciates this encouraging vote of confidence, and we, too, extend our invitation to membership to any eligible medical assistant. Our membership chairman, Mrs. Marlene Mitchell, 3004 Davenport Avenue, Davenport, will be happy to answer questions regarding eligibility for membership.

IAMA members are proud to be a part of our national organization, and to have contributed to its growth. In six short years, AAMA has seen tremendous growth, and its potential is unlimited. Four-fifths of these United States are now either chartered by AAMA or are in the process of organizing, and our present national membership is over 10,000. Our educational programs on local, state and national levels are exceptional. Through these programs—both technical and cultural—medical assistants have improved themselves and their ability to perform their duties so well that the position of medical assistant has earned the respectable title of "profession," and we proudly

take our place in the business, civic and cultural activities of our respective communities.

—HELEN G. HUGHES

Social Security Tax Increase

In your financial planning for the new year, don't forget to allow for another increase in Social Security taxes.

For an employee, the tax goes up from $3\frac{1}{8}$ to $3\frac{5}{8}$ per cent on the first \$4,800 of salary or wages. That is matched by his or her employer. This means that the maximum tax in a year rises from \$150 to \$174 each for employer and employee, an increase of 16 per cent.

There is a similar increase in the tax on the first \$4,800 of earnings of a self-employed person. The rate rises from 4.7 to 5.4 per cent. Thus, the maximum tax increases by nearly 15 per cent—from \$225.60 to \$259.20.

MORE TO COME

The increase, effective with the first pay check in January, is the ninth since the Social Security program was adopted, and two more boosts are scheduled even if the law is left as it is. The rate on employer and on employee is due to rise to $4\frac{1}{2}$ per cent in 1966, and to $4\frac{5}{8}$ per cent in 1968. The rate for a self-employed person will go to 6.2 per cent in 1966 and to 6.9 per cent in 1968.

Any increases in benefits, of course, would require boosts in rates beyond those now scheduled. The bill to provide hospital care for the aged under Social Security that was defeated in the last session of Congress would have boosted the rate on employee and employer by $\frac{1}{4}$ of 1 per cent, and the rate on the self-employed by $\frac{2}{5}$ of 1 per cent. It also would have applied the entire tax on the first \$5,200 of earnings, instead of \$4,800!

The Iowa Association of Medical Assistants extends its best wishes for 1963 to all members of the Iowa Medical Society, their Medical Assistants, and to the staff of THE JOURNAL OF THE IOWA MEDICAL SOCIETY, in sincere appreciation for the many kindnesses and assistance given to the organization.

Edmund G. Finney
COMMISSION

COMMISSIONER

Iowa Public Health Nursing Services

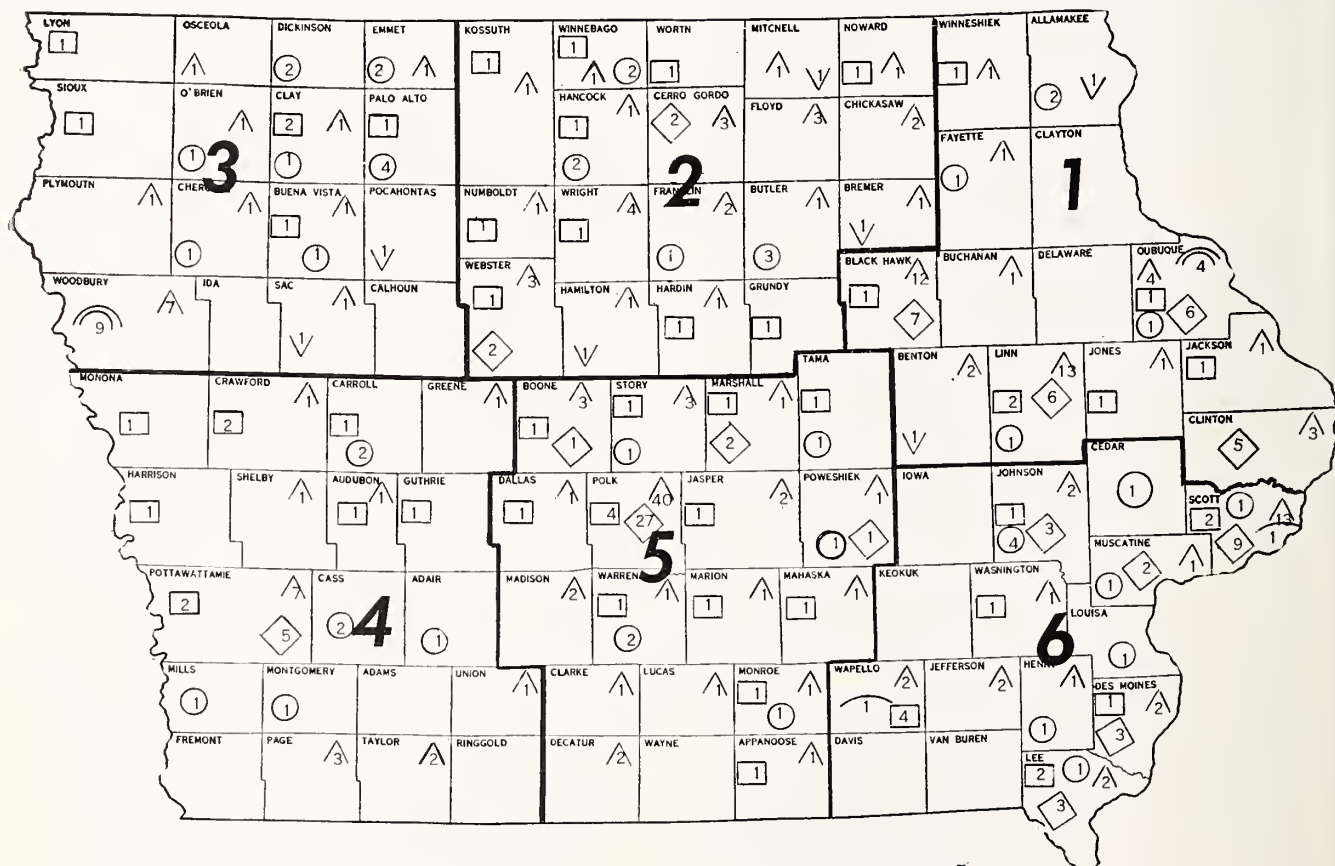
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





The accompanying map shows the various types of public health nursing programs in each of the counties of Iowa, with the numbers of nurses in each service exclusive of college nurses and nurses in industry.

It will be noted that there are 12 counties in which no public health nursing service is available from any local source. A limited amount of service is given to these areas, as well as to other areas, by nurses employed on a statewide basis by the Iowa State Department of Health and the State Services for Crippled Children. Services

given by the state agencies to the local areas relate primarily to activities associated with communicable disease control, and in the interest of children handicapped by orthopedic, heart and diabetic conditions.

County public health nurses are employed by boards of supervisors in cooperation with the Iowa State Department of Health. These nurses provide a generalized service embracing any health problems that may befall a family, regardless of its financial circumstances. Communicable disease, maternity, infant, pre-school and school health, and chronic disease service (including tuberculosis, venereal disease, cancer, heart and orthopedic nursing) are of concern to her. Her chief objective is prevention of illness and promotion



- | | | | |
|---|------------------------|---|--|
|  | COUNTY NURSES: 58 |  | COUNTY SCHOOL NURSES: 7 |
|  | VNA NURSES: 74 |  | HEALTH DEPT. NURSES: 13 |
|  | SCHOOL NURSES: 186 |  | OTHER AGENCY NURSES: 2
(COMMUNICABLE DISEASE) |
|  | P.T. SCHOOL NURSES: 48 | | |

of health. She is also available to give therapeutic and rehabilitation nursing services. She works with physicians and dentists, and coordinates her activities with those of other agencies to prevent duplication of effort and service.

The visiting-nurse organizations give generalized public health nursing service within the limits of the cities in which they are located. Their service is generalized and similar to that of the county public health nurses, except that in most of these agencies considerably more patient care is given. Their service to schools is usually limited to parochial schools, since in most of the cities where visiting nurse organizations exist, public school nursing is done by nurses employed by boards of education.

The school nurses employed by boards of education for the most part give service to school-age children. The modern concept of school nursing includes cooperation with medical, social, school and community groups in planning a coordinated health program for the school children, in addition to the provision of nursing care for minor ailments in schools and visiting the homes of children with communicable diseases or physical defects.

Other services given by public health nurses of official or non-official agencies are modifications of the three types that have been described. Some may be limited to a special condition or age group, but the basic principles relating to prevention of disease and to promotion and restoration of health apply to all public health nursing, wherever it is practiced.

The demand for public health nursing—especially for the generalized services—has increased far beyond what the available public health nurses can provide. We must look to local communities to provide recruits for the nursing profession, if the supply is to meet and keep up with the increasing demand.

Booklet on Epilepsy

Progress in treating epilepsy—a puzzling disorder affecting nearly two million Americans—is leading to a new public understanding and acceptance of people with epilepsy, according to a brochure issued recently by the U. S. Public Health Service.

EPILEPSY—HOPE THROUGH RESEARCH explores many widely-held misconceptions about epilepsy, including questions regarding heredity, intelligence, and personality. Problems often faced by people with epilepsy or their families are also discussed, such as education, employment, driving a car, and many others.

The brochure explains how drugs discovered in the last quarter century can control seizures in about 80 per cent of persons with epilepsy. Moreover, research studies now underway may result in better ways to control and even prevent sei-

zures. Research at the National Institute of Neurological Diseases and Blindness and other research institutes here and abroad is described.

EPILEPSY—HOPE THROUGH RESEARCH is listed as Public Health Service Publication No. 938 and Health Information Series No. 105. Single copies may be obtained without charge from the Information Office, National Institute of Neurological Diseases and Blindness, Bethesda 14, Maryland. Quantity orders are \$15.00 per hundred from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

Morbidity Report for Month
of November, 1962

Diseases	1962 Nov.	1962 Oct.	1961 Nov.	Most Cases Reported From These Counties
Diphtheria	1	2	0	Woodbury
Scarlet fever	198	179	142	Johnson, Polk
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	295	251	191	Des Moines, Hardin, Winnebago
Whooping cough	7	0	8	Clinton
Brucellosis	3	4	11	Jasper, Louisa, Woodbury
Chickenpox	303	116	153	Des Moines, Dubuque, O'Brien, Polk, Scott
Meningococccic meningitis	2	0	1	Linn, Polk
Mumps	86	84	91	Clay, Scott
Poliomyelitis	0	2	1	
Infectious hepatitis	29	44	96	Black Hawk, Scott, Tama, Woodbury
Rabies in animals	9	24	22	Linn
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	23	21	33	For the state
Syphilis	65	90	59	For the state
Gonorrhea	102	114	95	For the state
Histoplasmosis	5	7	5	Wapello
Food intoxication	0	0	0	
Meningitis (type unspecified)	2	1	11	Chickasaw, Montgomery
Diphtheria carrier	0	8	0	
Aseptic meningitis	1	0	0	Johnson
Salmonellosis	3	4	2	Johnson, Polk, Story
Tetanus	3	0	1	Clinton, Delaware
Chancroid	0	3	0	
Encephalitis (type unspecified)	0	1	0	
H. influenza meningitis	0	2	0	
Amebiasis	13	2	0	Boone
Shigellosis	1	2	0	Wright
Influenza	0	0	4	

Method of Reporting Cases of Diphtheria

The Department of Health attempts to make a complete study of every diphtheria case reported in Iowa. The accompanying tabulation summarizes the recent series of cases in Sioux City and its vicinity. This summary is presented to show the type of reports the different states send to the U. S. Public Health Service for analysis and use in studying diphtheria and suggesting control procedures. In order that the information received by the USPHS may be uniform, all states use the same criteria for entering information in the different columns on the Appraisal Summary Sheet.

DATES OF INJECTIONS: *Date of completion of primary series.* A primary series for the purposes of this report is defined as three injections given at intervals of not less than one month and not more than three months. *Date of last booster.* A booster is defined as an injection given following completion of the primary series.

VACCINATION STATUS: "F"—Fully vaccinated, defined as having completed the primary series within four years of case onset; or completed a primary series at any time, plus booster within four years of case onset. "L"—Lapsed—primary series, only, completed more than four years before case onset; or primary series at any time, plus booster completed more than four years before onset. "I"—Inadequate—primary series never completed. "N"—No history of vaccination; never vaccinated. "Unk"—Unknown immunization

status; not known whether or not patient received injection against diphtheria.

*** LABORATORY DATA ON C. DIPHTHERIAE:** This entry is for results of bacteriologic culture for C. diphtheriae only. "Pos" (positive); "Neg" (negative); "NC" (not cultured); "Unk" (unknown whether culture was made, or culture results not known).

POSITIVE CULTURE: Entries are to be made for positive cultures of C. diphtheriae only. *Type:* "M"—mitis; "I"—Intermedius; "G"—gravis; "Ind"—indeterminate type. *Virulence:* "V"—virulent or toxin-producing; "AV"—avirulent, nonvirulent or non-toxin-producing organism.

*** SEVERITY:** "Mild"; "Mod"—moderate; "Sev"—severe; "Unk"—unknown degree of severity; "D"—died; "C"—carrier. (Persons with positive cultures but with no clinical symptoms are defined as asymptomatic carriers.)

COMPLICATIONS AND/OR COMMENTS: First priority for this space belongs to complications—e.g., myocarditis; tracheotomy; "bull neck"; nephritis; neuritis; otitis; bronchopneumonia; serum sickness. Space permitting, entry may be made of: (1) the type of diphtheria—"N" (nasal); "NP" (nasopharyngeal and/or tonsillar); "L" (laryngeal); "LTB" (laryngotracheobronchial); "C" (cutaneous); (2) total number of boosters received by the patient; (3) carriers or other cases in family; (4) results of microscopic examination of slides.

PHS 4.124 (CDC)
REV. 6-60

FORM APPROVED
BUDGET BUREAU NO. 68-R557.1

DIPHTHERIA APPRAISAL SUMMARY STATE OF IOWA

DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
COMMUNICABLE DISEASE CENTER

September &
Month October Year 1962

Case No.	Initials	City and County	Onset Date	Ethnic Group	Sex	Age	Date of		Vac. Status	*Lab Data on C. diph.	Positive Culture		*Severity	Complications and/or Comments
							Primary Series	Last Booster			Type	Virulence		
							(Optional)							
1		Sioux City, Woodbury	9-10	W	F	10	1952	None	L	Pos		V	Died	Six active cases in family
2		"	9-14	W	F	13	None	"	N	"	G	V	Mod	Pharyngeal - Hospitalized
3	Although case initials are routinely used here, they are purposely omitted in this release.	"	9-17	W	M	6	"	"	N	"	G	V	"	Tonsillar - "
4		"	9-18	W	M	9	"	"	N	"	G	V	"	" "
5		"	9-18	W	M	4	"	"	N	"	G	V	"	Pharyngeal - "
6		"	9-18	W	M	2	"	"	N	"	G	V	Mild	Tonsillar - "
7		"	9-18	W	F	8	1954	1962	F	"			Mod	Pharyngeal - "
8		"	9-21	W	M	14	1948	1959	F	"		V	Mild	" "
9		"	9-23	W	F	7	1945	1962	F	"	G	V	Mod	" "
10		"	9-23	W	M	12	1950	1959	F	"			Mild	" "
11		"	9-27	W	F	13	1958 (1 inj.)	None	I	"	G	V	"	" "
12		"	9-27	W	F	3	1958 (1 inj.)	"	I	"	G	V	"	" "
13		Ute, Monona	9-28	W	M	12	None	"	N	"	G	V	Mod	" "
14		Correctionville Woodbury	10-26	W	M	9	1954	1958 - 1959	F	Clinical Diagnosis			"	" "



Woman's Auxiliary News



An Anniversary

December, 1962, marked the third anniversary of the Buchanan County Auxiliary, and so that it might not pass unnoticed, a "birthday" dinner for about 32 people was held to celebrate the event. Those sharing the occasion were girls from St. John's School (who sang for their supper), girl scouts (who were waitresses and clean-up crew), and Auxiliary members (who were the cause of it all). In addition, there were two State Auxiliary past presidents (who have wangled invitations annually).

One doctor's wife is a troop leader for Girl Scouts, and she is engineering projects to line the troop's coffers so that the 18 girls can go to Europe in 1966, using money they have earned.

As an impartial observer, I was amazed to hear first-hand reports of large sums of money earned on projects and then expended in community services so rapidly that the balance of funds is again precarious! I'm sure Independence is thoroughly aware of its Medical Auxiliary. It surely is a real asset to the community. Inspiration can be garnered merely from listening to the organization's minutes and financial reports.

"Thank-you" letters for dinners served to school children, an ornate batch of cookies and beaded-felt favors were material evidence of the esteem the community feels for these active, dedicated women. They reflect glory on all of us through their deeds.

Congratulations and thank you for all you have done in your Auxiliary's three years of existence!

—MRS. R. F. NIELSEN

Membership

The Membership Chairman is hoping for your cooperation in meeting the National Auxiliary's aim "A substantial increase in membership." Securing new members for the Auxiliary starts at the grass roots level, or with the county membership chairmen in organized counties. As an active member, you are asked to join the Auxiliary's "Buddy System." Don't just ask doctors' wives to join; rather, make close friends with them so that they will feel they are parts of your organization!

Milestones to Marriage

The Milestones to Marriage project is becoming more popular with school counselors and young people's church groups. Several requests have been received during the past month for quantities of the sets of materials.

Have you made the information regarding this series of letters available to your school counselors and other people working with high school seniors? In each community, Auxiliary members can help organizations that work with young people by disseminating information and providing active leadership. Any group with influence over youth behavior should be of special concern to Auxiliary members. This segment of the Mental Health Program may help prevent problems before they arise and need to be corrected.

If you are unfamiliar with "Milestones to Marriage," please write to the Woman's Auxiliary Office, 529—36th Street, Des Moines 12, for your copy.

Essay Contest

A packaged library of information on the AAPS Essay Contest was mailed to each organized Auxiliary early last fall, and members were urged through a letter from the Community Service Chairman to make the necessary contacts in the high schools for cooperation in this freedom program.

There are two topics from which contestants may choose: "The Advantages of Private Medical Practice," and "The Advantages of the American Free Enterprise System Over Communism." The prizes at the national level total \$2,675, with a \$1,000 first prize, a \$500 second prize, a \$250 third prize, four prizes of \$100 each, and seven prizes of \$75 each. In addition, the Iowa Medical Society presents prizes of \$100, \$50 and \$25 to the first, second and third place winners at the state level. Iowa contestants won third and seventh places, nationally, in the 1962 contest. Students from your county could be among the top winners this year.

Please follow up your initial visit with your school executives, and urge your school's participation in the 1963 essay contest.

COUNTY AUXILIARIES

Buchanan

The Buchanan County Medical Auxiliary held its Annual Benefit Card Party at Hotel Pinicon, in Independence, on November 24. All types of games were played, including bridge, five-hundred, canasta, pinochle and cribbage. Prizes were given for each game, and two door prizes were also awarded.

Proceeds were used by the Auxiliary in its county projects, which include the county-level prizes in the AAPS Essay Contest, and a local-level nurses' loan fund which at present is assisting a second-year nursing student and a trainee in laboratory technology. The organization also makes contributions toward the support of special education classes, and provides Christmas parties and gifts for the residents at the Buchanan County Home and for the children at the Independence Mental Health Institute.

Mrs. J. F. Loeck is the Auxiliary president, and Mrs. Don Ingham was in charge of the Benefit Card Party.

Sioux Med Dames

The Sioux Med Dames held their Christmas meeting on Wednesday, December 12. Money corsages and a money tree served as a kick-off for AMA-ERF fund-raising. The members are doing their best to help in lifting Iowa from the bottom of the list in per capita contributions to AMA-ERF in 1963.

In Memoriam

Our sympathy is extended to the family of Mrs. William H. Myerly, of Des Moines, whose death occurred on November 20. Mrs. Myerly was a member of the Polk County Medical Auxiliary, the Woman's Auxiliary to the Iowa Medical Society and the Woman's Auxiliary to the American Medical Association.

Notes

Mrs. Ralph Moe (Millie) has moved from Griswold to 906 Grand Avenue, Council Bluffs. Since she is State Safety Chairman, many members will want to make this change in their copies of the

YEARBOOK. All mail should now go to her new address.

* * *

The District XI report in the December WOMAN'S AUXILIARY NEWS contained a misprint. Mrs. G. J. MacMillan is our state president-elect, and it was she, not Mrs. Hazel Lammey, who spoke briefly at that meeting on organization and told of a recommended film, "Your Health—Your Choice."

A Nose for Trouble

In times past, when coal was used universally for fuel, it was not uncommon for a doctor entering a patient's house to smell coal gas and to announce the fact. These warnings undoubtedly saved many lives.

Heating systems have changed, but they are still largely based on combustion, and the danger of carbon-monoxide poisoning is still present.

Here are a few simple precautions that will remove most of the dangers of carbon-monoxide poisoning:

1. Any abnormal condition such as a stove that smokes or a smell of smoke in living quarters is a danger signal, and the cause should be investigated. Homes today are more nearly airtight because of storm windows and modern construction technics. This increases the possibility of carbon-monoxide poisoning if furnaces and hot-water heaters are not operated properly and kept in proper adjustment.

2. All fuel-fired hot-water heaters should be connected to a flue leading outside the house. Space heaters should also be vented, unless approved for unvented use. This applies to both oil- and gas-fired appliances.

3. If a kitchen exhaust fan or any other exhaust fan is used in the house, the fan should be checked during its operation in order to see that a proper draft is maintained. An exhaust fan may cause a back draft through the furnace flue. It is possible to pull smoke and fumes through the furnace if the house is sealed too tightly and if a furnace-room window is not open slightly.

4. Automobile exhaust systems should be checked regularly to eliminate conditions which might result in the leakage of carbon monoxide. On the road, a leaking exhaust may allow carbon monoxide to accumulate inside the car. *Always keep a window open, even in cold weather!*

We may have progressed to the point of "over-kill" in weatherizing and insulating our houses. The little brown house in the valley was the devil to heat, but it certainly was ventilated!

—Editorial in NEW YORK STATE J. MED.,
62:3720, (Dec. 1) 1962.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

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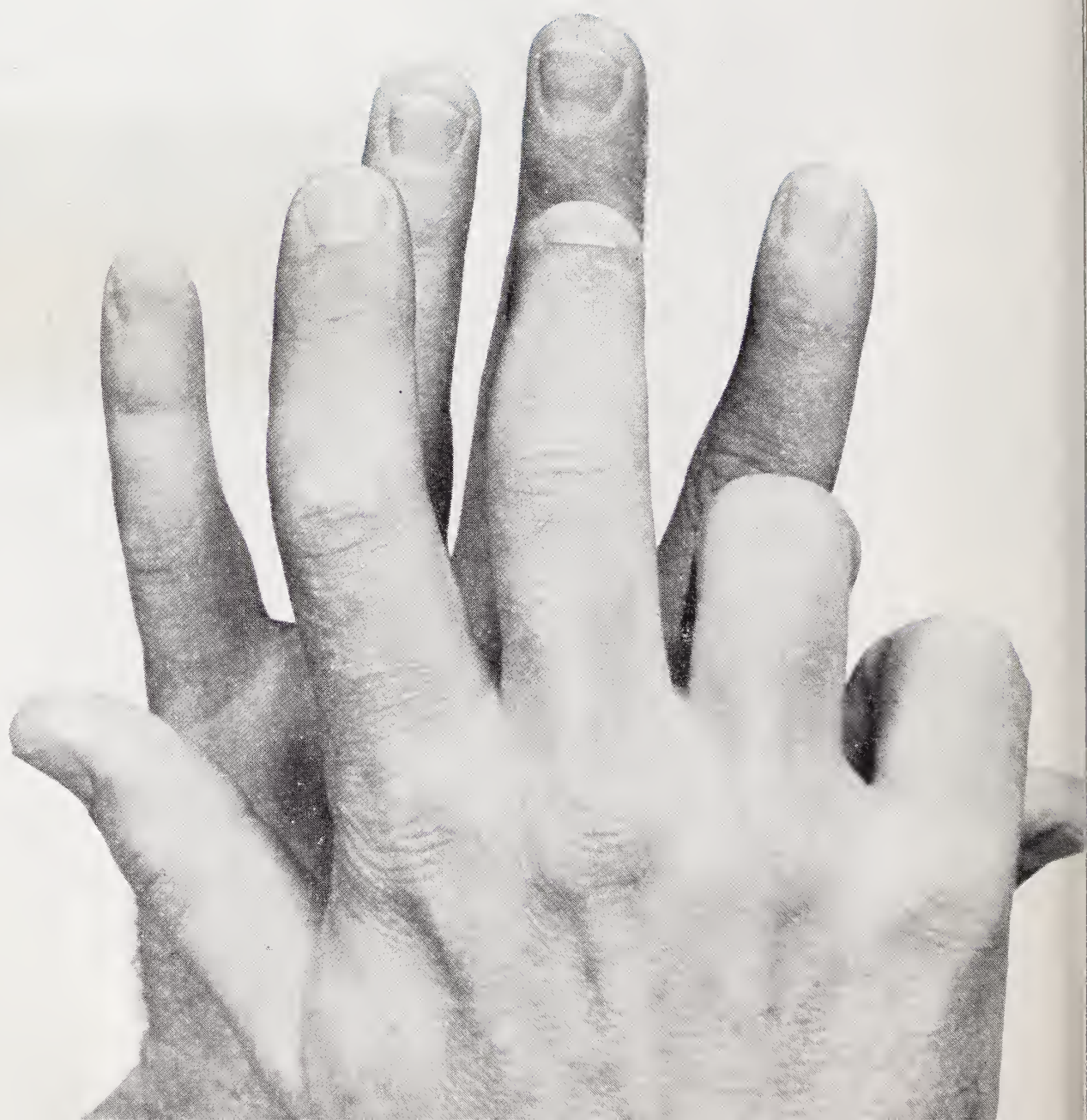
FEBRUARY, 1963

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In Friedlander's Pneumonia^{3,13}

Although the prognosis in Friedlander's pneumonia is poor, treatment with CHLOROMYCETIN has shown a good response when susceptible strains of *Klebsiella pneumoniae* are incriminated.

In Hemophilus Influenzae Pneumonia^{3,4,13,14}

Because the invading organism is usually sensitive to CHLOROMYCETIN, this agent is generally effective in pneumonias caused by *H. influenzae*.

In Staphylococcal Pneumonia^{1-8,13}

CHLOROMYCETIN continues to remain effective against many resistant strains of staphylococci, and—alone or in combination with other antibiotics—should be considered when other antistaphylococcal drugs are ineffective.

In Acute Epiglottitis^{4,10,11}

This condition is most often caused by *H. influenzae*, most strains of which are sensitive to CHLOROMYCETIN. Therapy should be instituted at once, since the disease may progress from the first symptoms to a severe respiratory obstruction in four to six hours.

In Pneumonias Due to Gram-negative Bacilli⁹

Because of its broad-spectrum activity, CHLOROMYCETIN is often effective in pneumonias caused by sensitive strains of *Aerobacter*, *Proteus* of various species, *Paracolonobacterium*, and other gram-negative pathogens encountered with increasing frequency in serious respiratory tract infections.

In Staphylococcal Empyema¹²

The infiltrating lesions of staphylococcal empyema are often difficult to eradicate. While CHLOROMYCETIN should only be used when the infection has been resistant to treatment with other antistaphylococcal drugs, therapy with CHLOROMYCETIN, in conjunction with surgical procedures, will often bring favorable results.

CHLOROMYCETIN (chloramphenicol, Parke-Davis) is available in various forms, including Kapseals® of 250 mg., in bottles of 16 and 100. See package insert for details of administration and dosage.

Warning: Serious and even fatal blood dyscrasias (aplastic anemia, hypoplastic anemia, thrombocytopenia, granulocytopenia) are known to occur after the administration of chloramphenicol. Blood dyscrasias have occurred after both short-term and prolonged therapy with this drug. Bearing in mind the possibility that such reactions may occur, chloramphenicol should be used only for serious infections caused by organisms which are susceptible to its antibacterial effects. Chloramphenicol should not be used when other less potentially dangerous agents will be effective, or in the treatment of trivial infections such as colds, influenza, or viral infections of the throat, or as a prophylactic agent.

Precautions: It is essential that adequate blood studies be made during treatment with the drug. While blood studies may detect early peripheral blood changes, such as leukopenia or granulocytopenia, before they become irreversible, such studies cannot be relied upon to detect bone marrow depression prior to development of aplastic anemia.

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We Can Meet the Challenge If—

E. J. FAULKNER
Lincoln, Nebraska

ADVOCATES OF PRIVATE enterprise in insurance and medicine are still enjoying the happy afterglow of rejection by the 87th Congress of the proposals for expanding the Social Security system to embrace the financing of some of the health-care costs for some of the aged of our country. That the Congress was unwilling to bow before the enormous pressures that were placed upon it to sanction so radical and irreversible an extension of the welfare-state concept speaks volumes for the cogency of the case against the King-Anderson and similar bills, and for the efficacy of an aroused and alert public opinion. It tells us something, also, of the universal interest of people of all ages in health and health-care matters. It reaffirms our faith in the belief that an informed and vocal electorate is the surest safeguard of our democracy.

However, we would do well to remember that we live in fast-moving times, when crisis follows crisis in kaleidoscopic succession. Partly because of the insistent and aggressive program of the proponents of the King-Anderson Bill and partly because of the activity of the American Medical Association and others who opposed the measure, the so-called "medicare" issue was brought dramatically to the consciousness of vast numbers of Americans. But someone has remarked that "this is a 90-day country," meaning that the voters are quick to forget, as their attention is absorbed by new problems and new issues. There is no diversion of attention or intention, however, on the part of those who, over the years, have sought to transform our private-enterprise democracy into a centralized, collectivistic society. These are the doctrinaire socialists who prey on the credulity of the average man and use the political aspirations of those who would seek or keep political office to forward their concepts. Certainly, though we have won another round, now is not the time to relax our vigil against proposals that would regiment the practice of medicine, adulterate the quality of

health care, impair or nationalize our great insuring institutions, and place a heavy and unnecessary burden on our economy, while stripping the individual of more of his freedoms. Let us recall that last July, within minutes of the Senate vote that rejected the Anderson-Javits amendment to the Public Welfare Bill, President Kennedy told the country, in a nationally broadcast and televised statement, of his determination to make medicare the prime domestic issue of the fall Congressional campaign. We do know that the Forand Committee continues active. We need to reinvigorate our efforts, concentrating at this time on the grass roots.

OUR EDUCATIONAL WORK MUST CONTINUE

I am confident that we can meet the challenge if we keep its essential nature clearly in mind. Let no sugar coating disguise the fact that the King-Anderson, the Anderson-Javits and similar proposals would expand a paternalistic system to provide certain health-care benefits for the aged, irrespective of need! As a part of the Social Security system, the essential characteristics of medicare would be those of Social Security—and these characteristics are now becoming increasingly clear. This means that it would be compulsory, unitary, state-controlled—a system by which government prescribes levels of benefit for all, irrespective of personal need or local conditions. By employing compulsion, this system would result in a mandatory redistribution of income, and lead to the egalitarian state. It would be characterized by rising cost, much of which would be deferred for later generations to pay. Its complexity would tend to make its administrators—consisting, naturally, of its proponents—its principal interpreters. Despite the proponents' disclaimers, its benefits would be an expensive kind of charity, for the only socially justifiable basis for a compulsory system is the special need of some. Because it would be monolithic, compulsory and devoid of the energizing influence of competition, it would tend to become static. Finally, as people the world around have found to their dismay, social benefit costs grow and grow, unless sternly checked, and thus medicare would jeopardize already-promised Social Security benefits and would add materially to the tax burden of every individual and every business. If we recall that these would be the characteristics of medicare, we are

Mr. Faulkner is president of the Woodmen Accident and Life Company, and he made this presentation at the Fall Conference for County Medical Society Officers, in Des Moines, on October 5, 1962.

less likely to succumb to the naive belief that all is well, and that this is simply a measure to provide some help for our worthy old people.

We can meet the challenge if we will communicate to our fellow citizens the real nature and the implications of these proposals for compulsory health benefits. These are not simply proposals to adopt simple plans, humanitarian in purpose and well within the capabilities of our economy. Rather, they are subtle schemes which those who think beyond today and tomorrow recognize as the gravest sort of threat to our way of life.

In communicating the nature of the challenge, we must recall that most Americans are not familiar with the basic issue. Many of them have been led to believe that there is a real need for government help for most of the aged in meeting their health care costs. The facts prove the contrary. We must remember that there is vast confusion over what benefits legislation such as the King-Anderson Bill would provide. Its proponents have been quite willing to allow the public to assume that if this legislation were enacted, older people would be relieved of substantially all of their health-care costs. On the contrary, the fact is that the benefits presently proposed would cover less than many good private health insurance plans cover. We must remember that the public suffers from a real euphoria in Social Security matters, having been assured that all is well, whereas many serious students of the program foresee great disappointments and serious problems in the future.

VOLUNTARY INSURANCE CAN STILL BE IMPROVED

We can meet the challenge if we will persevere vigorously in expanding and improving private health insurance—not just for the aged, but for people of all ages. No business has a better record in the public interest than private health insurance. Measured in terms of written premiums, it has experienced a more than 5,000 per cent increase since the low point of 1933, and the business is continuing to grow in terms of premium volume at a rate of about 10 per cent per year. Today, 135 million Americans—almost three out of four—have some private health insurance. Among the aged, 55 per cent of all Americans over age 65 are insured, and unless the business is hampered by government intervention, 80 per cent of our senior citizens will be insured by 1970.

It is indicative of the ingenuity and drive of private health insurance that at this very time the business is launching imaginative new programs to extend private health insurance coverage to those senior citizens who are not now protected. Several insurance companies are engaged in widely advertised nationwide enrollment campaigns, in which older people are given an opportunity to provide themselves with coverage without in-

dividual evidence of insurability. Insurers are joining in cooperative efforts such as the "Connecticut 65," the "New York 65" and the "Massachusetts 65" plans. Strong and well-established life and casualty insurers are entering the field for the first time. Blue Cross and Blue Shield plans are conducting enrollment drives in order to make broad coverage available, irrespective of prior health history. All of this vast and various activity has been engendered by the normal healthy competition that is usual in private enterprise, and by a deep-seated conviction among private insurers that they not only have the capability of providing satisfactory insurance for the aged, but must do so in the public interest.

We shall meet the challenge if, while pushing vigorously to provide a maximum of coverage for the aged, we recognize that there is a relatively small proportion of older people whom we cannot reach. These are the indigent or near-indigent who cannot pay or get someone else to pay the relatively modest premiums necessary to adequate private health insurance. I know of no accurate determination of the exact number, among the 17 million persons age 65 or over, who fall in this category, but studies that have been made suggest that they are but a small minority of our senior citizens. Recognizing that there are these older people who are now, and probably always will be, beyond the purview of private insurance, we should continue to support adequacy in the assistance programs both public and private which society has established to assure them of care.

THE STATES MUST IMPLEMENT THE KERR-MILLS ACT

To the Old Age Assistance program, which dates back to 1935, the Congress added the Medical Assistance for the Aged program as a part of the Kerr-Mills law in 1960. It is notable that the American people have not neglected their responsibility to the indigent or near-indigent aged. In 1950, Congress amended the Old Age Assistance law to make payments directly to the suppliers of medical care. In 1958 such payments were increased. In 1960 the Kerr-Mills law provided a doubled-barreled program of assistance. First, medical-care payments under Old Age Assistance were raised, and second, a new form of aid was instituted to help persons not on relief who have enough resources to meet ordinary living expenses but who can't pay unusually high medical bills. Some 31 states have adopted plans to implement the Medical Assistance for the Aged program, and all but one state have increased medical payments for the aged under relief, by availing themselves of the other part of the Kerr-Mills Act. In addition to the provisions made by the public through government, our aged have the assurance that none of them who needs and seeks medical care will be denied it, for it is the time-honored tradi-

tion of our doctors and hospitals to provide care when it is needed, irrespective of ability to pay. We can help meet the challenge by supporting appropriate and timely implementation of the Kerr-Mills law, and by lending our influence to assure that local governments adequately reimburse the doctors and hospitals that care for indigents of all ages.

HEALTH-CARE COSTS MUST BE HELD DOWN

We can meet the challenge if we will do all that we possibly can to explain and to contain the rising level of health-care costs. Although according to Consumers Price Index data the recent increases in such costs have not been so sharp as heretofore, we cannot gainsay that health-care costs have risen substantially, and that they are likely to continue rising. In part, higher costs have been due to the impact of general inflation on doctors and hospitals. Happily, inflationary influences seem no longer to be in the ascendancy in our economy. Increased health costs have been attributable in part to the amazing advances of scientific medicine. These have made far better health care possible. Doctors and hospitals today can restore good health rather quickly to people who in years gone by would have suffered from devastating and prolonged illness, or who would have died. The price tag for these achievements is small indeed when compared with the value of the better health and longer lives that our people enjoy today. This fact needs to be driven home to all Americans.

But simply because doctors and hospitals are now able to provide vastly superior health care does not relieve us of the responsibility for striving to stabilize costs—to contain them, and where possible to reduce them. The universal adoption by practicing physicians of the American Medical Association's proposal that they charge a lower scale of fees to the aged would be helpful in this connection. Scrupulous avoidance of any increase in charges to patients, irrespective of age, who have the benefit of health insurance is essential if health insurance is to be effective. Every physician must bear constantly in mind that overprescription and the provision of unnecessary care strikes at the economic heart of private practice and private insurance. Both better hospital scheduling of patients and more professional hospital management will be helpful in stabilizing health-care costs.

PUBLIC RELATIONS ARE AN INDIVIDUAL RESPONSIBILITY

We shall meet the challenge if we work constantly for better public relations. Good public relations have been said to consist 90 per cent of doing a good job and 10 per cent of telling people

about it. In health insurance, we must seek constantly to perfect the coverage in our contracts, economy in our operations and efficacy in our distribution. Physicians, on their part, should recognize that they no longer generally enjoy the public image of trusted counselor, healer and family friend, always available in an emergency. The necessities of modern, complex practice have, unhappily, tended to diminish the warm personal rapport that was once the *sine qua non* of the private physician-patient relationship. Although few patients are openly critical of their physicians, there is an unhappy undercurrent of grumbling and dissatisfaction because fees are not explained and so tend to be misunderstood, because of the clinical impersonality of much medical care, because of a growing propensity to discontinue house calls, particularly at night, and because of a failure on the part of too many doctors to explain individual health problems to patients in terms that they can understand. Good public relations grow from the grass roots. They are a compound of the millions of contacts made each day by individual doctors with their patients, and by individual insurance men with their prospects and their policyholders. It is supremely important for each practitioner to *live* the Hippocratic oath, and for each insurance man to adhere to the high ethical standards of the insurance business.

CONCLUSION

We can meet the challenge if we continue to work together. We cannot coerce doctors, hospitals, others in the healing arts, or insurers of all kinds to cooperate. But we can continue to teach the importance of cooperative effort among them to the end that the private-enterprise system may function efficiently and successfully. In this spirit of cooperation, we must beware of seeking special advantage for any element of the private health care complex. For example, government subsidization of any kind of insurer would lead to a chosen-instrument policy, and ultimate nationalization. Tax exemption or preferential status accorded to any one type of insurer, although perhaps of immediate advantage to it, would be ultimately weakening and deleterious to all.

We believe that more and more Americans are becoming disenchanted with big government, with its inevitably burdensome and increasing costs, and with its bureaucratic interference in the life of the individual person. We believe that a more understanding American people has commenced to recognize that man must take care of his own. The responsibility for his security and that of his loved ones rests with him, for there is no reality in the concept of collective security, either for men or for nations. Human beings can get security only by providing it for themselves, because the weight of its cost destroys the whole when those

who work must provide support for the improvident to an extent approaching what they provide for themselves.

I am confident that we shall meet the challenge

in 1963 and in the years that follow by demonstrating in action the adequacy and superiority of the private practice of medicine and of private health insurance.

The Fight Against Food Fads Continues

In addressing the annual meeting of the American Dietetic Association, on October 9, 1962, Mr. K. L. Milstead, of the U. S. Food and Drug Administration, congratulated Fred Stare, M.D., of Harvard University, for his courage in contradicting the false claims of the food faddists, and listed some of the principal false prophets in the field of nutrition.

Dr. Stare succeeded, recently, in defending himself against a libel action brought by the Boston Nutrition Society, which he had said was identical with the Copley Square Diet Shop. He had asserted, and he still maintains: "The faddists want you to believe that the food industry is forcing white bread down the throats of the American public. However, for centuries the majority of mankind has preferred white bread. It is still the overwhelming favorite. Despite the efforts to 'sell' whole wheat flour, the sale of dark flours has remained essentially the same, about two to three per cent of the total flour output. From a practical viewpoint in most American diets, dark flour and enriched white flour are the same in food value, and they both make important contributions to our diet. To imply or suggest that enriched white bread can cause or contribute to [the metabolic diseases, cancer, diabetes and mental diseases, and to the formation of dental cavities] is a cruel and reckless fraud."

In his speech to the American Diabetic Association, Mr. Milstead listed a number of other groups which, like the Boston Nutrition Society, are interested in the same "health foods" and are using wholly unjustified scare tactics. He named Natural Food Associates, of Atlanta, Texas; National Health Federation, of San Francisco; and Academy of Applied Nutrition, of Los Angeles. It is noteworthy that the first of these is headed by Joe D. Nichols, M.D., the vice-chairman of the Committee on Nutrition of the Texas Medical Association. Mr. Milstead says that Dr. Nichols is "a leading advocate of the use of 'natural' foods

and a foe of all processed foods, fluoridation of water, use of commercial fertilizers and pesticides."

Dr. Nichols, he says, testified at Dr. Stare's trial that he was the author of the statement circulated by the Boston Nutrition Society which had formed the basis for the suit. In another trial, in 1956, Dr. Nichols had expressed the belief that multiple sclerosis is due to a dietary deficiency. When questioned by the Court, however, he admitted that he had seen only one case of multiple sclerosis in his entire medical career. Subsequently, the Court, referring to Dr. Nichols' testimony, exclaimed, "What a fake that was!"

The National Health Federation, Mr. Milstead said, "has supported completely discredited medical treatments such as the Hoxey cancer treatment."

All three organizations have spread the "four myths of nutrition: (1) that all diseases are due to faulty diet; (2) that soil depletion causes malnutrition; (3) that commercial food processing destroys the nutritive value of foods; and (4) that most Americans suffer from subclinical deficiencies, and thus need to supplement their diets with various concoctions."

Apropos of *CALORIES DON'T COUNT*, Mr. Milstead declared: "Investigation . . . has brought to light a surprising story of how this best-selling book was deliberately created and used to promote and sell . . . worthless safflower oil capsules for the treatment of obesity, cardiovascular disease and other serious conditions."

FOLK MEDICINE and *ARTHRITIS AND FOLK MEDICINE*, both written by D. C. Jarvis, M.D., he says, have been used to promote the sale of honey and vinegar, and other "health foods." Many seizures of stocks of such products, along with copies of these books, have been made by the FDA.

Mr. Milstead also said it is the present policy of the FDA to regard as illegal all statements that specific fats or oils are effective in the prevention or treatment of heart or artery disease.



Scientific Articles

Jaundice in Childhood

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ADVANCES IN GENETICS and biochemistry provide a fresh approach to, and a new terminology for, some of the problems of medical jaundice. The bilirubin initially produced from hemoglobin breakdown is liberated into body fluids as a free, unconjugated pigment which is more lipid- than water-soluble. Within liver cells, free bilirubin is conjugated with one or two molecules of glucuronic acid, a derivative of glucose metabolism, and enters the bile as an aqueous-soluble pigment, bilirubin mono- or di-glucuronide. Extrahepatic formation of bilirubin monoglucuronide may also take place, and bilirubin may conjugate to a lesser extent with sulfates and other anions. This free, unconjugated bilirubin represents the indirect-acting fraction in the diazo reaction, whereas bilirubin conjugates are the direct-acting bilirubin fraction. The water-soluble conjugates of bilirubin are more easily excreted than is the free lipid-soluble pigment. Both forms are transported in the vascular fluid in a loose combination with serum albumin, and are in equilibrium with pigment in the extravascular fluid. Free bilirubin is a neurotoxin capable of producing irreversible changes in neurones of certain brain nuclei.

CHILDREN ARE MORE SUSCEPTIBLE THAN ADULTS

The normal adult liver has a large reserve capacity to conjugate and excrete bilirubin. Significant hyperbilirubinemia in the adult is unlikely in the presence of increased red-cell breakdown or decreased liver function, except when these dis-

turbances occur in combination or when they are unusually severe. Thus, adults with chronic hemolytic anemia or chronic hepatic insufficiency may not have clinical jaundice. The normal liver in the newborn characteristically lacks this large reserve capacity with respect to bilirubin. Indeed, hepatic function in the newborn is barely able to cope with the minimum amount of bilirubin produced by red-cell breakdown, so that virtually all infants in the first week of life experience a physiologic hyperbilirubinemia, and the condition is more severe and prolonged in those infants who have been prematurely born. Recent studies of bilirubin glucuronidation in newborn and adult animals indicate that glucuronyl transferase, an enzyme which is present in liver cell microsomal preparations and which is necessary for the conjugation of bilirubin with glucuronic acid, is reduced during fetal life, increases during the neonatal period and reaches normal adult levels only after several weeks of extrauterine growth.

The newborn infant thus represents a compelling subject for the consideration of bilirubin metabolism. The delayed maturation of hepatic enzyme systems in the neonate results in a brief period of marginal capacity to handle a minimal bilirubin load. During this period, any one or combination of factors may lead to marked elevations in serum levels of free or indirect acting bilirubin, and possible bilirubin encephalopathy. These factors operate either by further impairing or delaying the maturation of hepatic function, or by an increasing rate of red-cell breakdown and producing a greater bilirubin load.

STRESSES AFFECTING HEPATIC FUNCTION

The newborn infant is subject to many stresses capable of affecting hepatic function. Hypoxia, a common clinical disturbance in the immediate perinatal period, may lead to a hyperbilirubinemia in the first days of life. Hypoglycemia, whether due

Dr. Kaplan, chief of pediatrics at Sinai Hospital of Baltimore, made this presentation at the 1962 Annual Meeting of the Iowa Medical Society.

to the effects of maternal diabetes or to obstructive intestinal lesions, is often associated with increased neonatal jaundice—perhaps as a result of decreasing the substrate available for glucuronic-acid synthesis, which is essential for bilirubin conjugates and excretion. The correction of hypoglycemia has quickly effected a reduction in the hyperbilirubinemia in such cases.

Congenital hypothyroidism is another disturbance sometimes associated with increased jaundice of the newborn, suggesting the need for proper endocrine support during this early period of hepatic-enzyme maturation. Although the jaundice of cretinism may persist for several weeks after birth, it may clear prior to the administration of thyroid hormone.

Neonatal infection—especially the generalized infection of the newborn by viruses, bacteria, spirochetes, and protozoa—is often associated with hyperbilirubinemia. Neonatal virus hepatitis is increasingly encountered as a cause for otherwise unexplained clinical jaundice.

The mother may contribute to the infant's bilirubin handicap by transfer across the placenta of a glucuronyl-transferase inhibitor substance, thought to be genetically determined in certain families, or of a pharmacologic substance administered during labor and harmful only to the fetus and not to the mother.

Finally, in certain rare families, a genetic fault results in a persistent deficiency in the activity of the glucuronyl transferase enzyme system. This chronic familial non-hemolytic jaundice is sometimes clearly manifest in the early weeks of infancy.

Even a slight increase in the rate of red-cell breakdown may disturb the delicate equilibrium of bilirubin homeostasis in the newborn period. Direct measurement of red-cell survival in the first days following birth indicates that the red cells of full-term infants have a normal life span, whereas the red cells of premature infants have a somewhat shortened life span. Thus, the premature infant whose hepatic function may easily be less adequate than that of the full term neonate, has a greater bilirubin load from hemolysis, and characteristically develops a more severe and prolonged hyperbilirubinemia.

Red cell breakdown may be further increased in the newborn by many factors. These include the action of maternal isoantibodies to the Rh, or A and B blood antigens, the action of naphthalene ingested by a mother and transmitted to her infant with red cells deficient in glucose-6-phosphate dehydrogenase, and the action of excess water-soluble vitamin K administered as prophylactic medication to mother, infant, or both. Congenital spherocytosis in the newborn infant may present as a severe hemolytic anemia with profound jaundice, but in other infants it may be so mild as to cause no clinical disturbance during the early

months of life. Occasionally a large encapsulated hematoma of scalp or liver may produce hyperbilirubinemia as the blood is resorbed during the first week of life.

THE PREVENTION OF KERNICTERUS

Kernicterus, or bilirubin encephalopathy, has yielded largely to the judicious use of replacement transfusion as a means of bilirubin removal. Nevertheless, the basic conditions essential for this dreaded complication of neonatal hyperbilirubinemia remain poorly understood, and current clinical studies are directed at the kinetics of bilirubin transfer from body fluids to body cells, particularly to those of the central nervous system. Kernicterus has been observed in premature infants exposed to sulfonamides in the first days of life, despite lower serum bilirubin levels than in untreated prematures not developing kernicterus. This paradox is now viewed in relation to bilirubin binding to, and dissociation from, plasma albumin.

Bilirubin is transported by extracellular fluids in combination with albumin. This bound bilirubin is in equilibrium with a moiety of unbound bilirubin, which in turn is free to traverse the cell membrane. Various organic anions have a greater affinity for the plasma proteins than does bilirubin, and may displace protein-bound bilirubin, with a resultant reduction in bilirubin levels in plasma and an increase in tissue bilirubin. Sulfonamides, salicylates, tolbutamides and acetazolamide are noteworthy in this respect, and should be withheld from mothers at term, and from newborn infants.

During the replacement transfusion of jaundiced infants, considerably more bilirubin is removed than circulates in the vascular compartment. The plasma protein of the donor soaks up bilirubin as it replaces the largely saturated plasma protein of the infant, and bilirubin is siphoned into the vascular compartment from the tissue spaces and, hopefully, from the tissue cells. This effect can be enhanced by the deliberate administration of human serum albumin prior to the replacement transfusion. The net bilirubin yield has been increased more than one third by this technique. Caution must be emphasized, however, since the infusion of concentrated albumin expands plasma volume rapidly and decreases hemoglobin concentration. Thus it is contraindicated in the presence of any significant anemia or cardiac distress.

Following replacement transfusion, a sharp rebound in the level of serum bilirubin is commonly seen. Although this may represent another manifestation of the continued flow of bilirubin from tissue spaces to the relatively unsaturated donor albumin in the vascular fluid, an additional factor may play its role in certain circumstances. Following blood transfusion, up to 10 per cent of the

transfused erythrocytes may be destroyed in the recipient during the first 48 hours, and sometimes in the first hours. This initial loss reflects injured or nonviable erythrocytes. Unless great care is employed to use the freshest blood and to protect that blood from unnecessary injury, it is possible that the replacement transfusion itself may contribute a significant bilirubin load for the newborn infant.

CONCLUSION

Thus, the newborn infant's susceptibility to hyperbilirubinemia enables us to recognize the roles of multiple factors in the control of bilirubin metabolism. The extension of these observations, into the laboratory on the one hand and into clinical medicine on the other, promises to open a large vista of exciting and useful knowledge regarding the complex problems of medical jaundice.

Silent Uterine Rupture

A Plea for Routine Postpartum Intrauterine Examinations

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Waterloo

THERE ARE AS MANY varieties of uterine rupture as there are birds in the air, and yet they all must be considered major and possibly lethal. The familiar traumatic rupture, with its catastrophic symptomatology, is seldom misdiagnosed, and usually is treated promptly and efficiently by all competent physicians. But the detection and proper treatment of the silent, relatively symptomless uterine rupture is quite another thing. It requires nuances of diagnostic acumen not found in overabundance among the physicians of this country who deliver babies.

It has been proposed^{6, 8, 9} that certain routine inspections should be carried out after each delivery. These inspections, if done properly, should always be informative and consistently valuable. On many occasions, they will save both patient and physician much tribulation. Each parturient, once delivered of baby and placenta, should have her entire vaginal vault inspected under direct vision. Her cervix should be scrutinized over its circumference, and if this is impossible the entire circumference should be palpated by the obstetrician's fingers. Then, his entire hand should be introduced into the cervix, and with a sweeping motion the fingers should probe into every corner

of the uterine cavity. This entire routine check-up can be carried out in a matter of seconds. It will reveal all lacerations of the birth passage, it will put an end to retained secundines, with the troublesome aftermath of bleeding and curettage they so often entail, and if carefully performed, it will do nothing to increase morbidity. The episiotomy repair is postponed until after these tissues have been inspected and found to be intact, for if the repair were done first there would often be some difficulty in finding enough room to conduct them properly.

CASE REPORT

H. W., a 34-year-old white woman, gravida III, para II, was first examined in the office on February 22, 1961. A diagnosis of 8-week intrauterine pregnancy was made, and she was given a vitamin-iron supplement, sent to the laboratory for prenatal blood and urine examinations, and subsequently examined periodically throughout her pregnancy. Her two previous pregnancies and deliveries had been uncomplicated, term affairs, the larger of the two babies having weighed 6 lbs. 9 oz. at birth.

Her third prenatal course was smooth and uneventful, and at term (September 19, 1961, by calculation) she had gained 28 lbs., and all the usual findings were normal. Her McDonald measurement, however, was 36 cm., and it was felt that although this baby would certainly weigh well over the birth weights of her other two children, her pelvis was capacious and no difficulty was anticipated.

She was admitted to the hospital on October 1,

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1961, in active labor, 4 cm. dilated, with the vertex at plus one station, and the contractions were of good quality and occurring every three minutes. Within five hours' time she had progressed to full dilatation and was taken to the birth room. It was noted during the course of her labor that there was a slight bulging of the lower anterior portion of the uterus, but at no time was there pain in this area, and she felt most of her contractions in the sacro-iliac region. The fetal parts were not palpated, and there was no localized pain or tenderness such as is classic in uterine rupture.

The anesthesiologist arrived in the nick of time, or so it seemed, when approximately three centimeters of scalp was visible at the introitus with each voluntary push of the patient's contractions, and she was given a saddle block. The position was occiput right anterior, and the vertex rested on the perineum. As the usual preparation and draping were carried out, the patient was alert, cheerful and talkative, and all her vital signs were normal. She was catheterized, and clear urine was obtained. Then, in the usual fashion, outlet forceps (Tucker-MacLean) were applied, and the baby's head was gently lifted over the perineum. One cubic centimeter of methergine was administered intravenously, and 1.0 cc. of pitocin was given intramuscularly as the shoulders passed easily. The baby cried spontaneously, and weighed 8 lbs. 4 oz. The uterus clamped down well to the level of the umbilicus, and the placenta separated and was gently expressed from the vagina.

The anesthesiologist had been following the patient's pulse and blood pressure throughout these procedures, and had noted no deviation from normal. She continued to be alert and responsive, and no difficulty was suspected. Following delivery of the placenta, the aforementioned routine postpartum examinations were carried out, and the entire vaginal vault except for the lower midline episiotomy was found to be intact. The entire cervix was normal, but intrauterine palpation revealed a 10-cm. gaping rent in the anterior aspect of the lower uterine segment (Figure 1). Immediate preparations were made to do a laparotomy, and while these were going on, the episiotomy was repaired. At no time did the patient deviate from an entirely normal appearance, with normal pulse and blood pressure readings, and her fundus was rock-hard and remained at the level of the umbilicus. The blood loss was estimated at about 250 cc., no excess uterine bleeding having been noted.

At laparotomy, the peritoneum covering the lower uterine segment was somewhat ballooned out because of air beneath it, but there was no evidence of active bleeding. The peritoneum was incised in exactly the same fashion as for a laparotrachelotomy. The laceration was precisely as previously described, and along its edges were small blood clots that appeared firm and semi-solid,

much like clots of several hours' duration. The laceration was approximately 10 cm. in length, four-fifths of it extending above the bladder, it was longitudinal in direction, and was not bleeding actively. It was closed in two layers with continuous #0 chromic catgut; then it was reperitonealized, and the abdominal wound was closed promptly. The patient did very well throughout the procedure, lost very little blood, and was removed to her room in good condition.

Her postoperative course was entirely uneventful. She was placed on a broad-spectrum antibiotic, Panalba, and otherwise was treated as any post-Caesarian patient would be. Her course was smooth, with no elevation in temperature, and there was no complication other than a mild degree of anemia due to blood loss, for which a hematinic preparation was given. She left the hospital on the seventh postoperative day, ambulatory and feeling well.

When she was next seen in the office, 14 days after her discharge from the hospital, she had a wound infection from which *Staphylococcus aureus*, coagulase positive, was cultured. This proved to be sensitive to Chloromycetin, and after 12 days' treatment with this particular drug, the

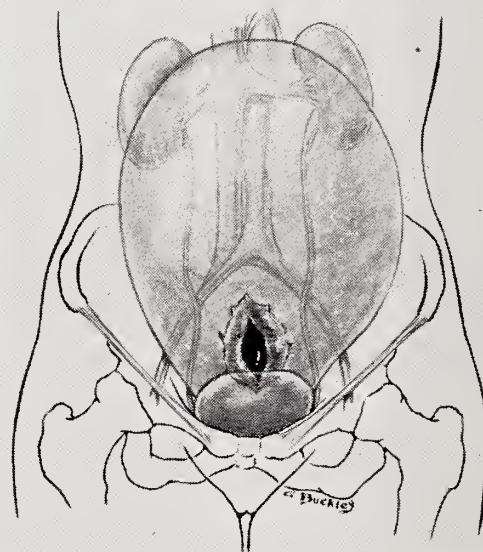


Figure 1. Following delivery, the entire cervix was normal, but intrauterine palpation revealed a 10-cm. gaping rent in the anterior aspect of the lower uterine segment.

wound cleared up satisfactorily. When she returned for her post-delivery examination, nine weeks after the delivery-laparotomy, the cervix was clear, the vault well-suspended, and her episiotomy well-healed. The uterus was still three times normal size, with some trace of lochia still present, but the adnexae were free of pathology. She was instructed to return for a final examination in three months, and when she came for that visit, her condition proved to be entirely satisfactory. Her hemoglobin was normal at that time, her menstrual rhythm had returned to its pre-pregnancy tempo, and she was discharged in apparently good condition.

COMMENT

Spontaneous, silent uterine rupture can occur during a labor or delivery unassociated with trauma, and if undetected it can lead to serious and oftentimes lethal consequences. This particular rupture very probably occurred during the terminal portion of the patient's labor. When she was questioned afterward, she stated that she had indeed "felt something pop inside," about two hours before being taken to the delivery room, but since it didn't hurt she didn't mention it to anyone. The only lead, on retrospection, was a slight bulging that had been visible over the lower anterior aspect of the patient's uterus, but this had not been regarded as a danger signal because of the lack of palpable abnormal findings, and because of the normal progress of labor and lack of untoward symptoms.

Had a routine postpartum intrauterine examination been omitted, this ruptured uterus certainly would have gone undetected, and one can imagine the very confusing picture of sub-involution, infection and possible hemorrhage that would have developed. The examiners of the Iowa Maternal Mortality Committee have studied several such cases in recent years, and they have noted that on more than one occasion undetected uterine rupture has led to a patient's death. Thus, a simple, harmless examination in this particular case may well have saved this patient's life.

SUMMARY

A case of silent, asymptomatic spontaneous rupture of the uterus has been presented, and a plea has been made for the performance of a routine manual intrauterine postpartum examination on every parturient woman.

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Nursing Home Situation Has Improved

Although a serious shortage of skilled nursing homes still exists throughout most of the nation, such facilities have almost doubled in their capacity since the first nursing home inventory in 1954, according to the United States Public Health Service.

Dr. Jack C. Haldeman, who directs the Hill-Burton program, says: "Since 1954, skilled nursing care homes have increased in number from 7,000 to 9,700, or 39 per cent. Their total capacity has nearly doubled—from 180,000 beds in 1954 to 338,700 in 1961. Practically all of these beds—337,300—were reported as assigned to skilled nursing service. Infirmaries or facilities having personal or residential care as their primary purpose account for an additional 24,900 skilled nursing beds, bringing the total of such beds available throughout the country to 362,200."

Non-hospital facilities in the United States and possessions which provide nursing or supportive services to chronically ill and aging persons now number 23,000, or 2,000 less than that shown in the 1954 inventory. Despite the drop in the number of facilities, however, the resident capacity now totals 592,800, a 32 per cent increase over 1954's total of 450,000.

The data were provided during July and August, 1961, by the various state agencies having information relating to such establishments. The following tabulation includes the most significant information on Iowa and contiguous states.

State	Total Beds	All Facilities Beds per 1,000 People	
		Total Population	Persons Aged 65 or Over
Illinois	24,734	2.4	25.4
Iowa	9,476	3.4	28.9
Minnesota	12,383	3.6	35.0
Missouri	15,801	3.6	31.4
Nebraska	2,944	2.1	18.0
South Dakota	1,061	1.5	14.7
Wisconsin	12,013	3.0	29.8
United States	352,380	1.9	21.1

Chronic Thyroiditis

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JOSEPH A. BUCKWALTER, M.D.
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IN 1896 AT MUNICH, Bernard Riedel,¹ a professor of surgery at Jena, first described the variety of chronic thyroiditis which now bears his name. He subsequently reported a total of three cases. In 1912, Hashimoto² of Kyushu, Japan, described four cases of another variety of thyroiditis which has since borne his name. The latter occurred in women over 40 years of age living in areas not endemic for thyroid disease. Until the forties, only occasional case reports appeared, and chronic thyroiditis remained a rare disease in the experience of most clinicians and pathologists. During the past 20 years, without any obvious explanation, the frequency of this disorder has grown.^{3, 4} This increase prompted us to review the experience with chronic thyroiditis at the State University of Iowa Hospitals.

The records of all patients seen between 1930 and 1960 with histologically-proved chronic thyroiditis were reviewed. Symptoms, physical findings, laboratory tests, treatment and the results of follow-up examination as noted in these patients, were studied. There were 92 cases. Two cases were seen between 1931 and 1940, 19 between 1941 and 1950, and 71 between 1951 and 1960. The reason for this increased frequency is not apparent. Uniform histologic criteria have been used throughout the 30-year period. This is attested to by E. D. Warner, who has been examining sections of thyroid glands in Iowa City during this entire time. In part, this increased frequency may be explained by an increasing concern on the part of clinicians, during these 30 years, about any and all thyroid masses.

The lack of agreement among pathologists concerning histologic criteria has caused confusion, and has led to inconsistencies in the data from the different studies of thyroiditis. The classification used in this study (Table 1) has proved workable, and is recommended to the reader.

Suppurative thyroiditis, a rare disorder (one

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TABLE I
CLASSIFICATION OF THYROIDITIS

Suppurative thyroiditis
Granulomatous (DeQuervain's) thyroiditis
—also called subacute, acute diffuse,
giant cell, pseudo tuberculous
Lymphocytic (Hashimoto's) thyroiditis
—also called struma lymphomatosa
Fibrous invasive (Riedel's) thyroiditis

case in 10 years at University Hospitals), may be caused by bacteria or viruses. Granulomatous thyroiditis has been a relatively common disorder at the University Hospitals.⁵ The clinical picture is characterized by anorexia, malaise, weight loss, pain and tenderness in the diffusely but not markedly enlarged thyroid gland. Pain is often referred to the external auditory canal. There is an in-

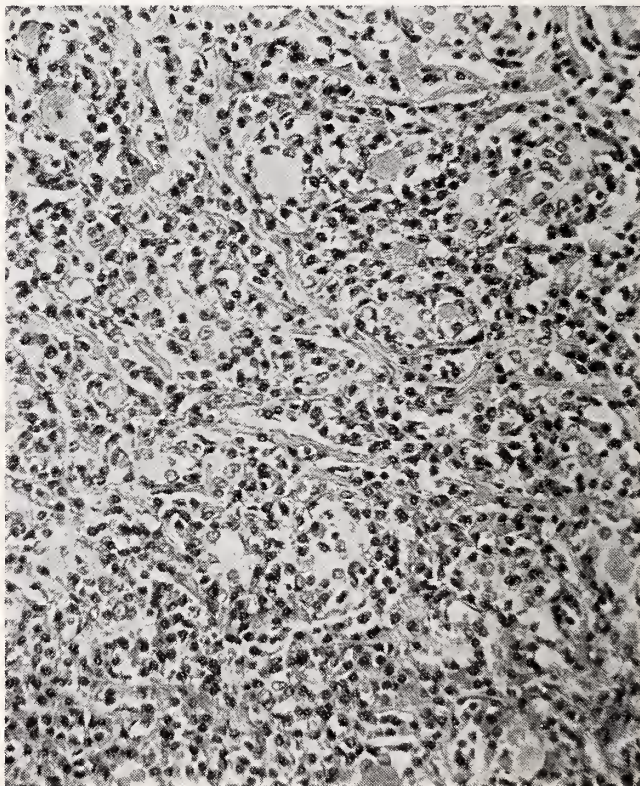


Figure 1. Chronic thyroiditis of "epithelioid" variety.

creased erythrocyte sedimentation rate. It is usually possible to make the diagnosis on these clinical grounds.

There is no such "typical" clinical picture in chronic (lymphocytic or fibrous invasive) thyroiditis. Likewise, the histologic features of these lesions vary enormously. Epithelial hyperplasia is the predominant characteristic in some patients, but in others, lymphoid infiltration and follicles are the most striking features. Other lesions consist mainly of a dense fibrous tissue struma, with widely separated atrophic follicles. It is difficult to decide whether cases with such lesions should be called lymphocytic or fibrous invasive thyroiditis. Figures 1 through 4 are photomicrographs from some of the representative lesions included in this study. Note the diversity of the histologic findings.

The etiology of chronic thyroiditis is unknown. Levitt⁶ suggested that chronic thyroiditis is part of a continuous process of hyperplasia and involution of the thyroid gland, beginning with toxic goiter and progressing through six stages to Riedel's struma. Twenty-two of his patients had repeat operations. In 16 glands, he found histologic evidence suggesting progression of the disease, consistent with this hypothesis. This progression was limited to one or two stages of the disease.

Recently, evidence has been found suggesting that thyroiditis may result from auto-immunization of the patient by his own thyroglobulin. Witebsky and Rose⁷ removed one lobe of a rabbit's thyroid, extracted thyroglobulin from it, injected it, and demonstrated antibodies and changes resembling those of Hashimoto's disease upon removal of the other lobe. In 1951, they reported that 12 of 18 of their patients had such antibodies. Roitt and Doniach⁸ reported 109 of 144 patients with such antibodies. They postulated that some mechanism permits the localized release of thyroglobulin from the thyroid follicles. Lymphocytes and plasma cells infiltrate the gland, and the plasma cells produce antibodies to the thyroglobulin.

The 92 patients in this study demonstrate well the variability of the clinical picture of chronic thyroiditis. The incidence of this disorder in patients undergoing thyroidectomy is reported from 0.75⁹ to 8.3¹⁰ per cent. The age and sex incidences were similar to those reported by other authors (Table 2). Fifty-nine of the patients, approximately two-thirds, were over the age of 40. There were four patients, all girls, under the age of 10.

There are no pathognomonic signs and symptoms of chronic thyroiditis. A mass, either noted by the patient or discovered on routine physical examina-

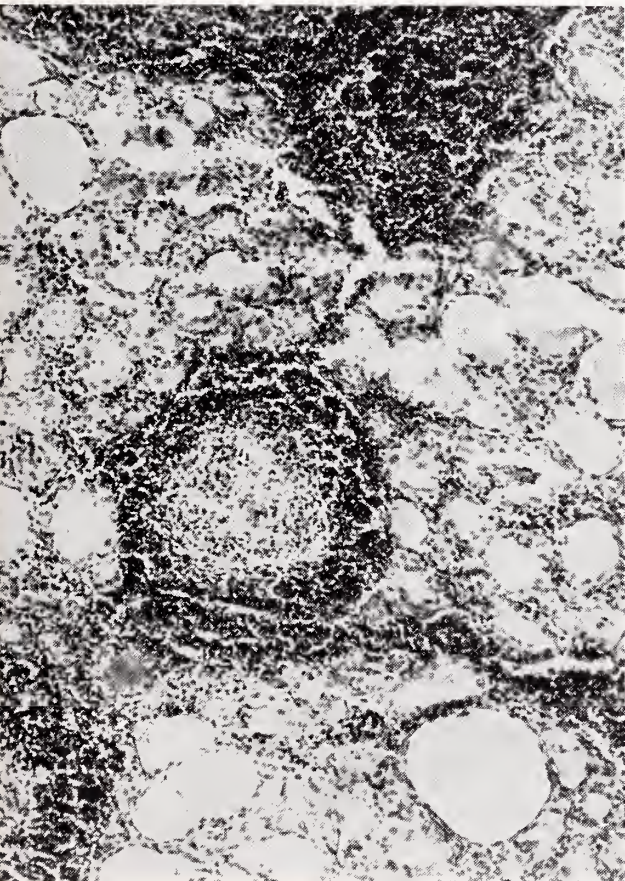


Figure 2. Chronic thyroiditis with lymphoid follicles and some epithelioid hyperplasia.



Figure 3. Chronic thyroiditis with marked lymphocytic infiltration and fibrosis.

TABLE 2
AGE AND SEX OF CHRONIC THYROIDITIS PATIENTS
SUI HOSPITALS, 1930-1960

Decade	Male	Female	Total
0-10	0	4	4
11-20	1	3	4
21-30	1	7	8
31-40	2	15	17
41-50	1	25	26
51-60	2	16	18
61-70	1	10	11
71-80	0	4	4
Total	8	84	92
Mean Age	41	45	44

TABLE 3
PHYSICAL FINDINGS, THYROID GLAND
IN CHRONIC THYROIDITIS PATIENTS
SUI HOSPITALS, 1930-1960

"Goiter"	
Bilateral diffuse	28
Unilateral diffuse	6
Bilateral nodular	34
Unilateral nodular	8
Solitary nodule	16
Consistency	
"Ca" like	2
Firm	56
Normal	4
Soft	6
Cystic	3
Rubbery	1
Not stated	20

TABLE 4
CLINICAL DIAGNOSES
CHRONIC THYROIDITIS PATIENTS
SUI HOSPITALS, 1930-1960

Hypothyroid	5
Euthyroid	79
Hyperthyroid	8
Carcinoma	3
Chronic thyroiditis	26
Nodular goiter	38
Adenoma	16
Other	9

tion, was the most common presenting symptom. This was noted in 76 of our 92 patients. The onset was usually insidious. Fifty-three patients had had symptoms for over a year, and 32 for more than two years, before seeking medical attention. Three patients had had goiters for 15, 21 and 63 years, respectively. Onset with pain was rare, occurring in only four patients. When pain was present, the duration of symptoms tended to be shorter. Symptoms (dysphagia, dyspnea and hoarseness) resulting from direct mechanical compression were reported in just three patients.

Twenty-one patients had histories of previous iodine therapy. Two patients had been treated with ionizing radiation to the neck. Two patients had symptoms of hyperthyroidism.

The physical findings were highly variable (Table 3). Note that there was bilateral enlargement of the thyroid gland in two-thirds of the cases. It is of interest that only in two cases had the examiner felt that the thyroid had the consistency of carcinoma. No other relevant physical findings had been noted in these cases. The basal metabolic rate, protein-bound iodine and radioactive iodine uptake were usually within the normal range, and therefore were of no help in the

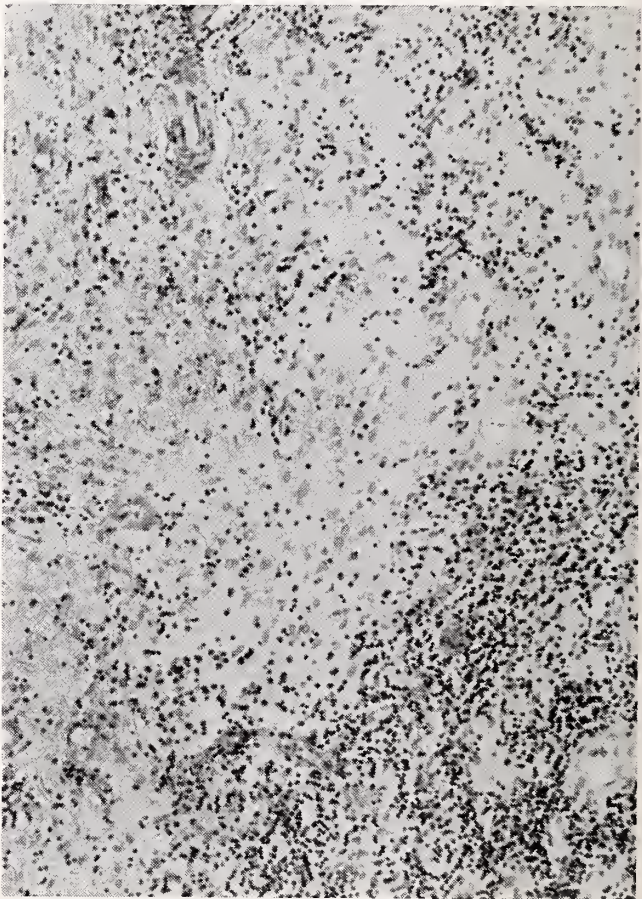


Figure 4. Chronic thyroiditis with more marked fibrosis and fewer epithelioid elements than in Figure 4. (Fibrous invasive-Riedel's-thyroiditis?)

diagnosis. The erythrocyte sedimentation rate, though increased in patients with subacute thyroiditis, is not increased in those with chronic thyroiditis.¹¹

The clinical diagnosis was chronic thyroiditis in a little over one-fourth of the patients (Table 4). The most common preoperative diagnosis was nontoxic goiter. Note that an erroneous diagnosis of carcinoma was made in only three cases. In contrast, an erroneous diagnosis of chronic thyroiditis is much more frequently made in patients with thyroid carcinoma.

In Table 5, the surgical treatment is summarized. Medical treatment, which included thyroid extract, external ionizing radiation, adrenal or pituitary steroids and salicylates (effective in many cases of subacute thyroiditis), was tried prior to surgical therapy in about half of the patients. Operative treatment was resorted to when the thyroid mass did not decrease in size after a reasonable period of time or, as occurred in four patients, when mechanical pressure symptoms appeared.

Surgery is undertaken in chronic thyroiditis to establish the diagnosis, to relieve pressure symptoms in the neck, or to achieve cosmetic objectives.

TABLE 5
SURGICAL TREATMENT
CHRONIC THYROIDITIS PATIENTS
SUI HOSPITALS, 1930-1960

Needle biopsy	5
Open biopsy	15
Isthmusectomy	8
Partial thyroidectomy	17
Lobectomy	19
Bilateral subtotal thyroidectomy	27
Total thyroidectomy	1

Excision of the goiter is not indicated by the natural history of the disease. Often the chronic thyroiditis goiter will decrease rapidly in size when thyroid extract is given. Thyroid extract, in 120-240 mg. doses, should be given to patients with chronic thyroiditis for the duration of their lives. The first reason is that chronic thyroiditis represents a type of thyroid-function failure. As the thyroid fails, there is increased thyroid stimula-

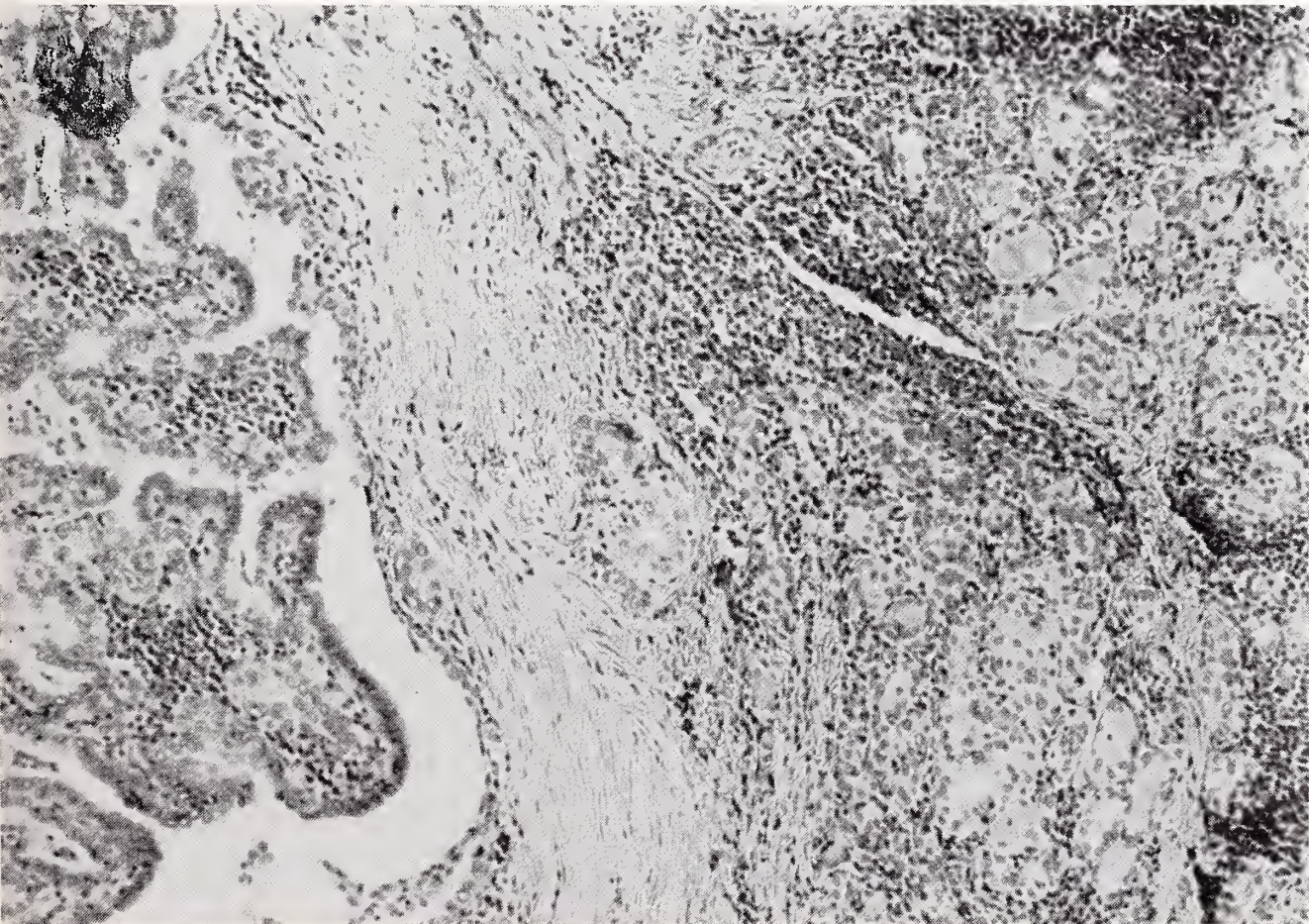


Figure 5. Well-differentiated carcinoma on left and chronic thyroiditis on right of photomicrograph.

tion by pituitary-produced thyrotropic hormone. Administration of thyroid extract removes the possibility that this excessive stimulation may cause carcinoma. Since hypothyroidism will intervene, sooner or later, thyroid extract should be started when the diagnosis is established. In selected cases, a needle biopsy may establish the diagnosis and make an open biopsy unnecessary.¹²

The finding of carcinoma associated with chronic thyroiditis suggests the possibility of a cause and effect relationship. Two examples which occurred in our group of patients are shown in Figures 5 and 6.

Lindsay *et al.*³ found a 12 per cent incidence of neoplasm in 331 cases of thyroiditis. This rate compared with an overall incidence of 3 per cent found in glands free of thyroiditis at operation. More recently, Schlicke *et al.*,¹⁴ in reviewing the histories of 189 patients who had had thyroidectomy for chronic thyroiditis, found that 8.7 per cent of patients with Hashimoto's disease had associated carcinomas of the thyroid gland. They felt conservative treatment in chronic thyroiditis to be ill-advised.

There is no direct evidence implicating chronic thyroiditis in the etiology of carcinoma. It is possible that lymphocytic infiltration and other findings have been caused by cancer that has been misdiagnosed as the usual variety of chronic thyroiditis. One frequently notes lesser degrees of lymphocytic reaction at the periphery of a carcinoma. The possibility of the co-existence of carcinoma and chronic thyroiditis is perhaps the strongest argument in favor of surgical excision.

Fibrous invasive (Riedel's) thyroiditis, much less common, more frequently causes dysphagia and dyspnea as a result of the large amount of fibrous tissue which literally can choke the patient. Cortisone and x-ray therapy are rarely helpful. Thyroidectomy is very difficult because of the dense fibrosis around the gland. Isthmusectomy, for the purpose of obtaining a histologic diagnosis and preventing or relieving compressive symptoms, is the treatment of choice.

Follow-up examinations have been carried out on only 64 of our 92 patients, and on those 64, in general, for only a short period of time (Table 6). In considering the data dealing with their present

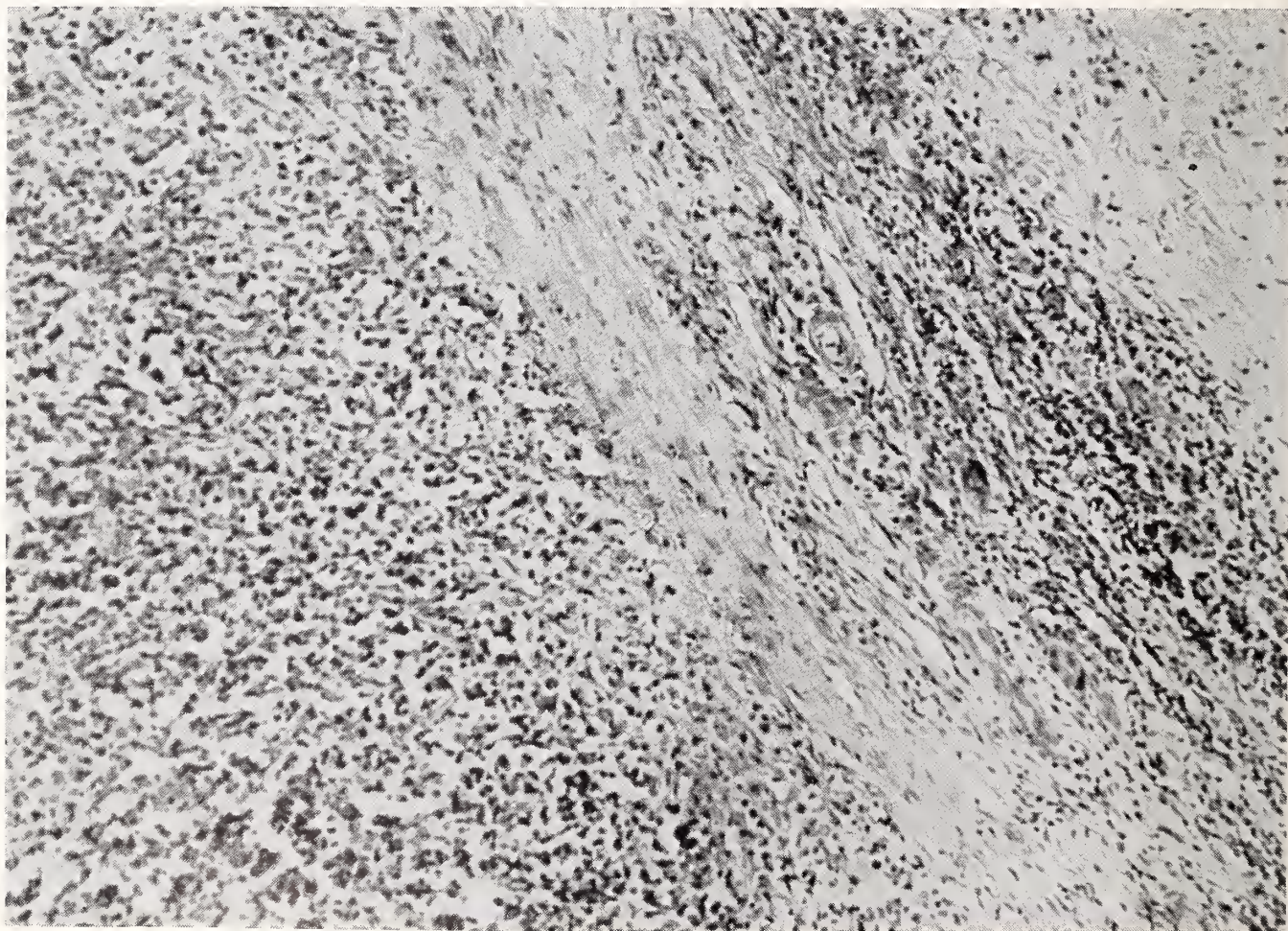


Figure 6. Poorly-differentiated carcinoma on left and chronic thyroiditis on right of photomicrograph.

TABLE 6
FOLLOW-UP OF CHRONIC THYROIDITIS PATIENTS
SUI HOSPITALS, 1930-1960

	Alive	Dead	Hypothyroid	Euthyroid	Hyperthyroid	T3	T4	Total
6 months	17	0	4	13	0	1	8	17
6 mo.-1 yr.	9	0	0	9	0	2	3	9
1-3 years	16	1	3	14	0	3	4	17
3-5 years	11	0	5	6	0	3	6	11
5-10 years	10	0	1	9	0	1	5	10
7-10 years	0	0	0	0	0	0	0	0
No follow-up								28
TOTALS	63	1	13	51	0	10	26	92

metabolic state, it is important to remember that 35 of the 64 patients are taking some form of thyroid medication.

SUMMARY

Ninety-two cases of histologically proved thyroiditis seen at the State University of Iowa Hospitals from 1930 to 1960 have been reported. The recent increase in the incidence of the disease has been pointed out. The clinical features, laboratory studies and treatment have been discussed.

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Psychiatry for the GP

A short course in the recognition and treatment of psychoneurotic disorders by the general practitioner will be given at the auditorium of the Nebraska Psychiatric Institute, in Omaha, on Thursday and Friday, February 14 and 15, by the Department of Neurology and Psychiatry of the University of Nebraska College of Medicine. The fee is to be \$30.00.

Principal items on the Thursday program are to be a film, "Psychiatric Techniques for the Family Doctor"; a demonstration of the initial interview, evaluation and and diagnosis, during which a new patient from the adult outpatient clinic will be interviewed by one of the resident psychiatrists; two films, "The Obsessive Compulsive Patient" and "The Conversion Reaction"; a panel discussion on the differential diagnosis of psychoneurotic disorders; and a report on the AMA Congress on Mental Illness and Health.

On Friday, the chief items on the program will be a presentation of treatment methods for use with the neurotic patient; a panel discussion of medication for the neurotic; a demonstration of supportive psychotherapy; a paper on investigative psychotherapy in general practice; and a question-and-answer session.

Pre-registration is requested, and checks should accompany applications. Address: Continuing Education, University of Nebraska College of Medicine, Forty-second and Dewey Avenues, Omaha 5.

Treatment of Malignancies of The Reticuloendothelial System

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THIS PAPER WILL present current methods of treating specific malignant diseases of the reticuloendothelial system, and will describe general supportive measures applicable to all of them. Individualized methods utilized in the leukemias, the lymphomas and multiple myeloma will also be explained.

Flexibility of treatment patterns is naturally necessary, but if greatest advantage is to be taken of an accurate diagnosis, fairly concise organization of treatment schemata must be followed. There is no place in this philosophy for comments such as "Give a little of this or that drug, since the disease is fatal anyway." Some of the drugs to be described are as useful today as when they were first introduced, and some of the newer ones to be described may eventually prove not to be substantial contributions. Because new chemotherapeutic agents are constantly being introduced, only the more familiar ones of them will be mentioned. There are no indications that the supportive measures I shall describe will soon become obsolete.

The physician must decide carefully whether or not to tell the patient his diagnosis and prognosis. Usually, a patient who is not the breadwinner of his family can be spared the details of the diagnosis and prognosis, and it is usually needless to confront children with this disagreeable information. People in the patient's community need know no more than that he has "some type of anemia that will require prolonged observation and treatment."

A keystone of adequate therapy is the counseling session between the physician and the patient and his relatives, before therapy is started. This need not include a prediction about the duration of the disease, although these perimeters can be approximated. Under the usual well-planned ther-

apy, the median life span is within a range of six to 12 months in childhood leukemia; two to four months in acute leukemia in adults; three to six years in chronic leukemia in adults; three to six years in the lymphomas; and two to four years in multiple myeloma. The counselling session should include warnings regarding the side effects and the lag periods that can be expected with the drugs that are to be used. It is also well for the doctor to stress the need for frequent follow-up examinations, including bone-marrow aspirations, and to make clear that hospitalizations will be kept to a minimum.

SUPPORTIVE THERAPY

Transfusions. These are used for support of the anemic patient until his own marrow can produce adequate red blood cells and platelets. They are usually continued until therapy has retarded the malignant cell proliferation in the marrow. Chemotherapeutic agents and roentgen rays, while performing their anti-tumor effects, depress marrow function, and transfusions may be required for this reason. Secondary hemolytic anemia is best managed through treating the primary disease. While this is being accomplished, the patient requires the benefit of transfusions. A patient is better fortified, subjectively and objectively, to endure a relapse if his hemoglobin is 12 Gm., rather than 8.0 Gm./100 ml. If red cells alone are required, they may be supplied as packed red cells (cell mass), thus sparing the patient the antigenic material that is present in plasma. On the other hand, whole blood supplies the patient with blood cells plus plasma proteins. For providing platelets, one must give him specially donated whole blood, preferably collected in siliconized bottles or plastic bags and administered within 10 hours of donation.¹ In a case of thrombocytopenia without excessive anemia, frozen, freshly donated plasma is indicated. Granulocytes are not viable for a long enough period to be transfused.

Infections. The use of antibiotics should be therapeutic and not prophylactic. This dogmatic statement, of course, may not be applicable to the extreme leukopenia encountered in some cases of chemotherapeutically-induced leukopenia, or in aleukemic leukemia. Appropriate cultures should

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be made of possible infection sites. Because of the appearance of fungus infections, particularly cryptococcosis (Torulosis) in the lymphomas and moniliasis (Candida), fungus cultures are important. Fever is an accompaniment of active lymphomas (Pell-Ebstein phenomenon), and it is always present in acute leukemia. It need not indicate an infection at these times, but one should nevertheless seek an infection site. Because some cases of chronic lymphatic leukemia and lymphosarcoma are accompanied by an especially damaged reticuloendothelial defense mechanism, repeated prophylactic injections of human gamma globulin may be advantageous.

Nutrition. As in other malignancies, protein intake is essential. Vitamin supplements may be necessary. Caution is essential, however, in the use of some vitamins because of their antagonism to the chemotherapeutic program. For example, there definitely is such an antagonism in the use of folic acid in patients being treated with the anti-folic acid drug Aminopterin.

Analgesia. Acute leukemia patients often manifest exquisitely severe bone pain. This is thought to be due to pressure exerted on the endosteum by the overpopulated marrow. Perisplenitis from congested and infarcted spleens is equally painful. These conditions may demand narcotic analgesia, and in these situations it is not sensible to withhold narcotics for fear of inducing addiction. Accumulation of fluid in body cavities may also produce pain. Except for the conditions listed, however, there are few painful situations in these diseases.

Hyperuricemia and hypercalcemia. Increased nucleic acid synthesis and catabolism from the untreated malignant condition and the nucleic acid destruction from chemotherapeutic agents produce hyperuricemia. When gouty symptoms develop, or when uric acid accumulation in the kidneys causes nephropathy, the treatment indicated is identical to that used in the correction of gout. It includes urine alkalinization with sodium bicarbonate in doses up to 10 Gm. per day, a large fluid intake, a uricosuric drug and, if needed, Colchicine. The arthritis of malignancy which is not attended by increased uric acid levels is an interesting but currently inexplicable phenomenon. Bony metastases are often accompanied by hypercalcemia. With the radiologic demonstration of these lesions and the attendant hypercalcemic symptoms, one must choose a combination of hydration, low-calcium diet and corticoid therapy.

Intracavitary effusion. Effusions in the pleural, pericardial and abdominal cavities may indicate lymphatic-drainage obstruction and/or impingement on the venous exit from a cavity. Malignant metastases to the serous surface may also be responsible. Regardless of the cause, these cavities should be evacuated. If fluid rapidly reaccumulates, installation of an alkylating agent, in addition

to diuretics, or x-ray therapy may be effective.

Central nervous system involvement. Involvement of the meninges greatly exceeds that of the brain or spinal cord. X-ray therapy and/or surgical decompression, especially when aqueduct structures at the base of the brain or the spinal cord are involved, may significantly aid the patient's well-being, if they are not delayed by the physician's timidity. In lymphomas, encroachment on the spinal cord may occur repeatedly, and though the doctor has corrected it on a single occasion, he must remain alert for its recurrence. In acute leukemia, central nervous system involvement may respond to intrathecal amethopterin in a dose of 0.25 mg./kg. every two or three days, or a dose of 0.5 mg./kg. every four or five days. The effect of therapy can be followed by watching the cerebrospinal fluid cell count and protein and the clinical picture.

Local irradiation. Irradiation therapy is indicated in each of the following: in lymph-node encroachment on the tracheobronchial airway, in spleen or abdominal lymph-node pressure on the gastrointestinal structures or the ureters, and in compression of the aqueduct drainage system of the brain or spinal cord.

Total body irradiation and marrow replacement. The true place of these procedures in the treatment of malignant disease still awaits the development of better technics for obtaining rapid remission during the interval between marrow extraction from the patient and marrow reinfusion into the patient. The irradiation must destroy a maximum amount of malignant tissue and a minimal amount of normal tissue.

ACUTE LEUKEMIA

Longevity in acute leukemia has increased. Antibiotics and improved transfusion technics have favorably affected survival, but the greatest contribution has come from chemotherapy. In former years, the course of acute leukemia was usually rapidly fatal in all age groups, a situation not commonly experienced nowadays in younger patients. The percentage of remissions is greater, and the duration of these remissions is longer.² Discussion of leukemia treatment will be divided into lymphatic, myeloid and monocytic. In each type, emphasis will be directed to the antimetabolites, the alkylating agents and the corticosteroids.

Acute lymphatic leukemia. This disease affects children predominantly, and it is effectively treated with the antimetabolites. The most successful of the antipurine drugs is 6-mercaptopurine (6-MP). This drug's effect is to block nucleic-acid synthesis. It is available in 50 mg. tablets, and the dosage is 2.5 mg./kg./day, preferably in divided doses. Marrow depression occurs before other toxicity, including gastrointestinal ulceration. Peripheral blood counts and bone-marrow examinations are therefore imperative as one follows the course.

Generally, 21 days of therapy will produce a remission. Because there is a five to seven day lag period from the administration of a tablet to its observed effect on the blood, one must anticipate dosage by following the trend from counts taken every two or three days. Generally, after 10 to 15 days the initial dose can be halved. Remission is indicated by subjective well-being, by the disappearance of petechiae, lymphadenopathy and organomegaly, and by unaided maintenance of blood-count values. Reticulocytosis is a favorable finding. A maintenance dosage of 0.5 to 1.0 mg./kg./day is then advised until a relapse occurs.

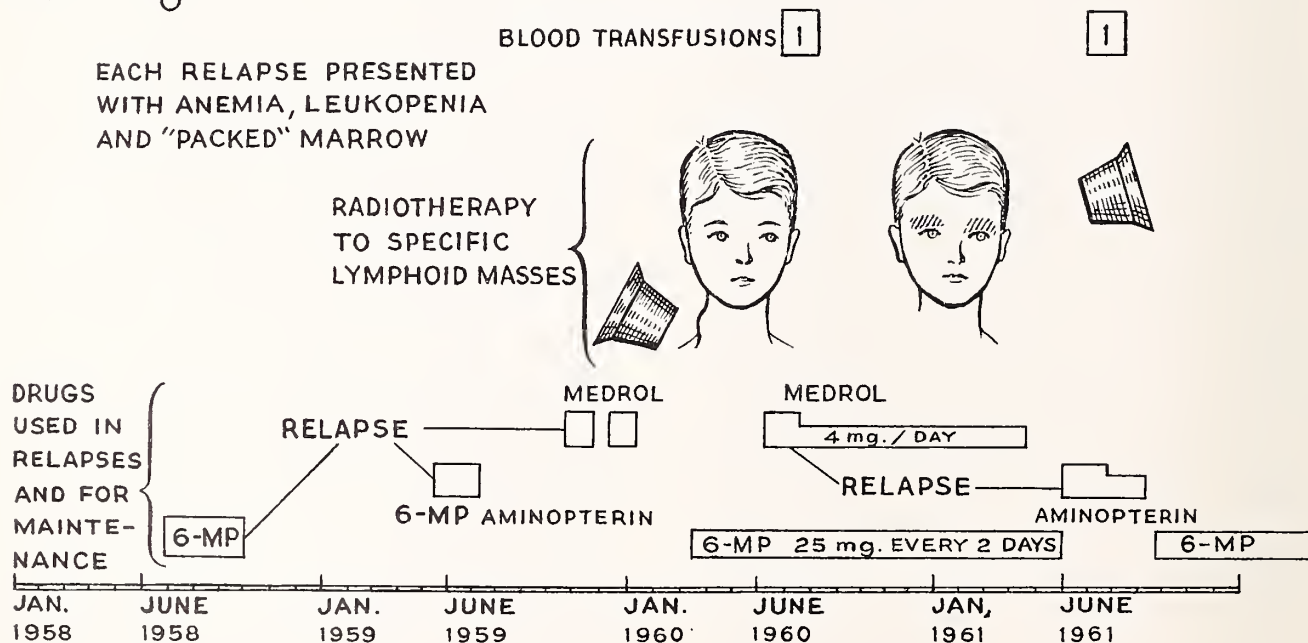
When a relapse takes place, another of the antimetabolites should be used. This may be one of the anti-folic acid drugs, amethopterin (Methotrexate) or aminopterin. Amethopterin is administered in a dose of 1.25 to 5.0 mg. orally once a day. The toxic side effect of mucous membrane ulceration usually occurs in seven to 10 days. Then, the drug is stopped, and if remission has not been achieved, the drug is restarted in approximately two weeks. There is less bone-marrow depression with amethopterin than with equivalent doses of 6-MP. Usually 21 to 28 days of therapy are required to gain a remission. This drug's toxicity on the mucous membranes prevents its use as maintenance therapy.

Personal preference or experience with aminop-

terin may dictate that it be used in place of amethopterin. This drug is given in a dose of 0.25 or 0.5 mg. daily by mouth in patients under and over four years of age, respectively. Beneficial effects on the patient's blood count will be seen following 21 to 28 days of therapy. Usually, one to two weeks of therapy produces stomatitis, and as with amethopterin, this drug must then be discontinued for one to two weeks. Mucous membrane toxicity precludes maintenance-phase therapy with this material.

It has not been established that 6-MP need be given concomitantly with an anti-folic acid drug. Few patients can maintain erythropoiesis with this combination. Occasionally, two or three remissions are obtained in a patient by means of a single drug. Except for a lessened resiliency as the disease progresses, the patient can be expected to respond to a second (different) antimetabolite if he has responded to the first one. Failure with one antimetabolite, however, does not indicate that there will be failure with another antimetabolite.³ The alkylating agent cyclophosphamide (Cytosan) has been used with limited success as the primary drug.⁴ Its effect is not predictably reproducible, but it is a welcome addition. It spares platelets and may be administered by any route, including the intrathecal. The antipyrimidines exemplified by 5-fluorouracil⁵ and the alkylating agent L-

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ACUTE LYMPHATIC LEUKEMIA

Figure 1. From the beginning of this child's disease in June, 1958, six relapses were successfully treated. The third, fourth and fifth relapses responded to massive steroid courses (300 mg./day, orally). Maintenance therapy with 6-MP and Medrol lengthened the periods of remission. X-ray therapy performed lymphoid-tumor lysis on two occasions.

phenylalanine mustard (Sarcolysin)⁶ are being subjected to clinical investigation in this type of leukemia.

Corticosteroids are not the first choice in the treatment of acute leukemia, but they are indicated in three specific situations: (1) when the patient's platelet poverty is so great that antimetabolite therapy requires steroid augmentation; (2) in acquired symptomatic hemolytic anemia; and (3) in the patient who has failed to gain a remission, previously or currently, with antimetabolites. No physician need be so rigid in his treatment of a patient that he shuns steroids if, after approximately seven days' therapy, it appears that the antimetabolite is producing no clinical or blood-count improvement. The dosage of steroids (Prednisone is used here as an example) for thrombocytopenic and hemolytic patients is 2.0 to 3.0 mg./kg./day. The dosage for attempting a remission is based on the same dosage per kilogram, but resistant cases may require doses of 100-300 mg./day. Steroid-induced remissions occur in one to three weeks, but are of shorter durations than those gained by means of antimetabolites. Hypercorticism is to be anticipated in all cases, and the attendant side effects are tolerated less well than in

most other diseases treated with steroids. A physician must keep these risks in mind if he prescribes steroids to achieve a better appetite or an improved morale. Figure 1 shows a case of acute lymphatic leukemia treated, on successive relapses, with an antipurine drug, an anti-folic acid drug and massive steroids.

Acute adult leukemia. Acute leukemia in the adult, with few exceptions, is myeloid or monocytic. The same principles of supportive treatment apply in adult acute leukemia as in its childhood counterpart. Ten to 20 per cent of acute myeloid leukemias respond to antipurine therapy, and 6-MP is given in a dosage of 2.5 mg./kg./day, orally. Beneficial effects reflected in the blood count are usually delayed until the fourth week of therapy. Two analogs of 6-MP are thioguanine and thioguanosine. The former is administered in the same dosage as 6-MP, and the latter is given in a dosage of 1.0 to 2.0 mg./kg./day. These analogs appear to be more toxic to the gastrointestinal tract than is 6-MP.

The above-mentioned drugs are used in acute monocytic leukemia. In addition, one may use Cytosan, vincaleukoblastine (Velban) and nitrogen mustard in attempting to achieve a remission

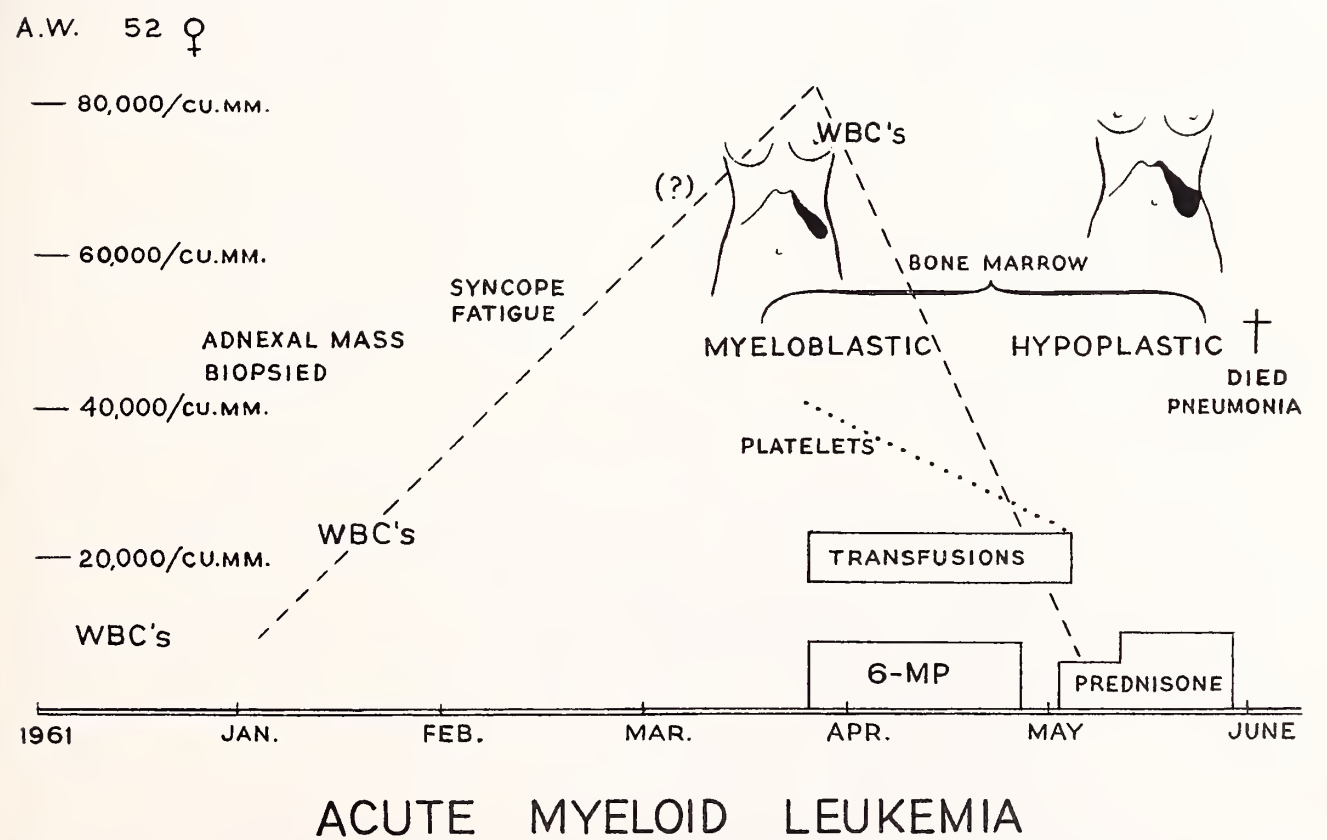


Figure 2. This woman lived four months after symptoms of leukemia developed. Her white blood cell count was normal at the time of a gynecologic procedure in January. Myeloblasts in the peripheral blood persisted and splenomegaly increased despite 200 mg./day of 6-MP, which was later combined with 80 mg./day of Prednisone.

in acute monocytic leukemia (Figure 2). Figure 3 shows the data on the clinical course of a patient with acute monocytic leukemia whose survival was unusually long.

It has been demonstrated that pre-treatment degree of leukocytosis, duration of symptoms, size of spleen, or severity of anemia, granulocytopenia and thrombocytopenia provide no basis for predicting the likelihood of response to a drug or the degree of improvement that will occur. The number of peripheral blasts does, however, bear an inverse relation to the duration of remission.⁷

CHRONIC LEUKEMIA

Chronic lymphatic leukemia. This is the commonest of the leukemias. X-ray therapy overshadowed chemotherapy in its treatment until 1946. In that year, interest in chemotherapy was aroused by the introduction of nitrogen mustard. This alkylating agent, originally used in the treatment of chronic lymphatic leukemia, was later supplanted by alkylating agents having less toxicity and acting at different locations on cell nuclei. X-ray therapy is now used only for special assistance in treating local areas more intensively than is possible with the generalized alkylating agent.

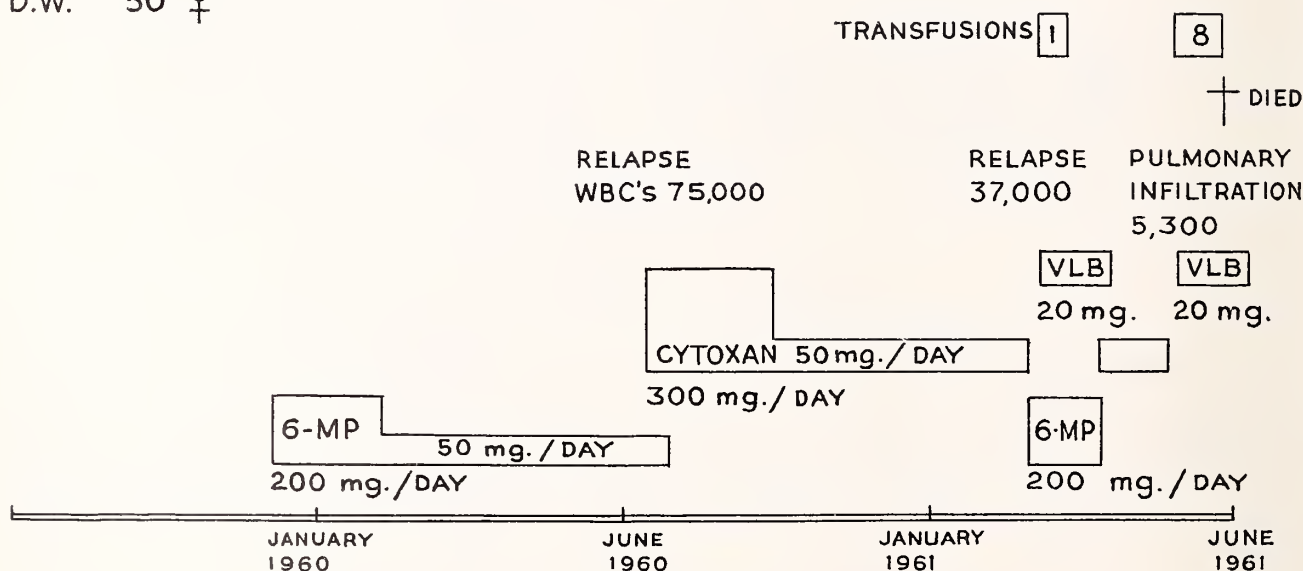
Divergence of opinion exists as to what level of white blood count demands treatment. Some arbitrarily advise treatment when the patient has a white blood count of 40,000/cu. mm.; others advise it at the arbitrary figure of 100,000/cu. mm.; and still others disregard the elevation in white count, and treat the disease only if there are symptoms.

Osgood⁸ recommends spaced doses of radioactive phosphorus (P^{32}) to maintain the white blood count at 15,000/cu. mm. Interestingly, he reports that the higher the initial level of leukocytes, the higher the required dose of P^{32} , even several years later. He recommends an initial dose of 1.5 millicuries of P^{32} for a WBC level below 40,000/cu. mm.; 2.0 millicuries for a WBC level between 40,000 and 100,000/cu. mm.; and 2.5 millicuries for a WBC level of over 100,000/cu. mm. The intravenous and oral routes of administering P^{32} are equally effective, but the oral route is easier to use. Six to 10 weeks are usually appropriate intervals for blood counts and repeat P^{32} administration.

Chlorambucil (Leukeran), a derivative of the more potent alkylating agents, is equally effective. One gives 0.2 mg./kg./day (generally 8-12 mg./day) until the white blood count approaches the desired level, and this is usually within two to six weeks. Then a maintenance dose of 2-6 mg./day is given. Rising or falling white blood counts dictate future doses. Triethylene melamine (TEM) and thiophosphoramide (Thio-TEPA), members of another group of alkylating compounds, demonstrate more rapid lympholysis, but are severely myelosuppressive.

Eventually, some chronic lymphatic leukemia patients develop a condition designated as "packed marrow." Bone marrow examination is necessary for an accurate assessment of this situation. Osgood feels, as do others, that maintaining a nearly normal white blood cell level is a safety measure

D.W. 50 ♀



ACUTE MONOCYTC LEUKEMIA

Figure 3. Successful remissions lasting six months, respectively, were achieved with 6-MP and intravenous Cytosin. After a relapse in March, 1961, a partial remission was obtained with vincalukoblastine (Velban) and 6-MP.

against the development of such lymphocyte proliferation in the marrow. Treatment for the "packed marrow" phase demands vigorous implementation of an intravenous alkylating agent, preferably Cytoxan, support with transfusions, and perhaps spray irradiation of the bone marrow. The patient thus treated is a temporary immunologic cripple, and must be given repeated doses of human gamma globulin. Figure 4 demonstrates some of the complications seen during the course of chronic lymphatic leukemia.

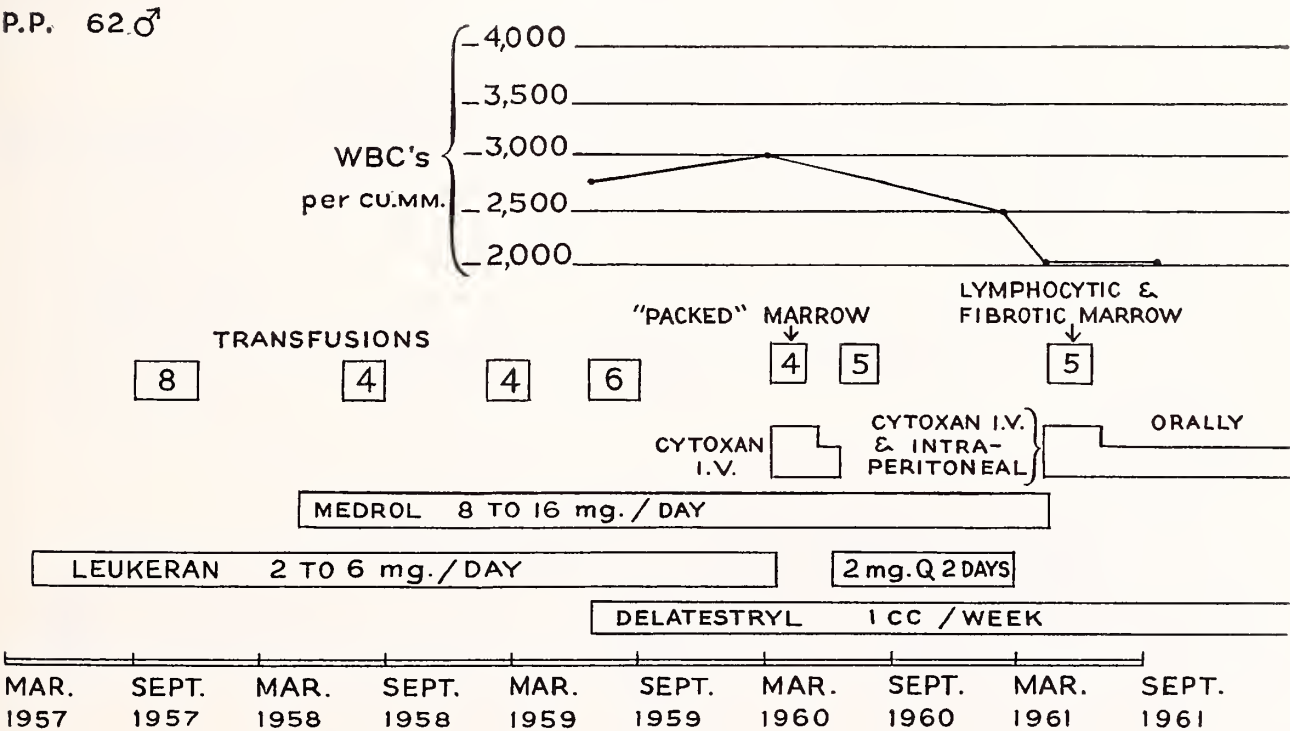
Chronic myeloid leukemia. In this type of chronic leukemia, universal opinion has insisted on maintenance of the white blood count at a nearly normal level. The reason for this is that chronic myeloid leukemia exhibits a greater tendency to enter the uncontrolled state when the count is elevated, a situation identical with acute myeloid leukemia. The treatment favored by some is radioactive phosphorus, administered in doses of 3 millicuries if the white blood cell count is less than 40,000/cu. mm.; 4 millicuries if it is between 40,000 and 100,000/cu. mm.; and 5 millicuries if it is over 100,000/cu. mm. This is given orally or intravenously every four to eight weeks, as needed.

Busulfan (Myleran), another alkylating agent, is equally effective. The initial dose is 0.15 mg./-

kg./day (generally 6-8 mg.). Maintenance therapy with Myleran may be achieved by (1) giving a daily dose of 1-2 mg.; (2) using it only when the white blood count demonstrates rising levels; or (3) spacing out short courses of Myleran irrespective of the rate of rise in white cell count.

X-ray therapy of the spleen is another method of control. Its use is dependent upon the availability of roentgen therapy equipment. The indication is the presence of an enlarging spleen or liver which impinges on abdominal structures. Like Myleran, it is used in response to an absolute blood count or is spaced in short courses irrespective of the white blood count. A fourth and recently introduced method of treating chronic myeloid leukemia is with dibromopiperazine (A8103). Its mechanism of action hasn't yet been determined, but it is probably an alkylating agent. It is given in oral doses of 4.5 mg./kg./day for three to six weeks. Eventual progression of this type of leukemia into an acute blastic phase or into an exhausted-marrow phase is to be expected. Figure 5 shows a case of chronic myeloid leukemia which was treated for severe uropathy and blastic transformation.

Chronic monocytic leukemia. This is a rarity, and is best treated with maintenance Cytoxan in



CHRONIC LYMPHATIC LEUKEMIA

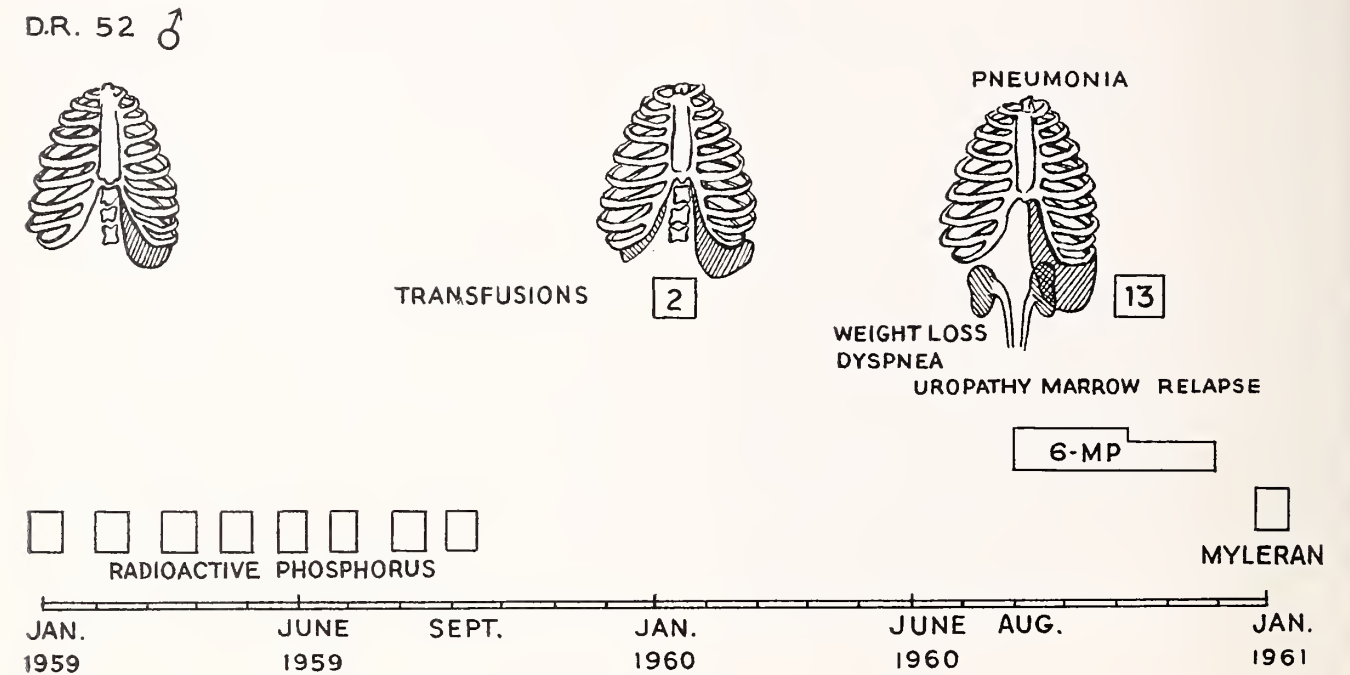
Figure 4. Chronic lymphatic leukemia was controlled by Leukeran in this man from 1957 until March, 1960, when he entered the "packed marrow" phase. This dense infiltration was relieved by 300 mg./day of Cytoxan, intravenously, for 11 days. In May, 1961, Cytoxan again "unpacked" the marrow, and was injected into the peritoneal cavity to act upon the suspected peritoneal implants. Medrol was given from April, 1958, for suppression of acquired hemolytic anemia. Delatesteryl, a long-acting parenteral androgen, was utilized for erythropoiesis.

a dosage of 50-100 mg./day. The acute and chronic phases of myelofibrosis (myeloid metaplasia) are treated by the same methods as are used in the analogous phases of myeloid leukemia. Massive splenomegaly may be such a mechanical encum-

brance that splenectomy is indicated. The presence of homolysis fortifies this decision.

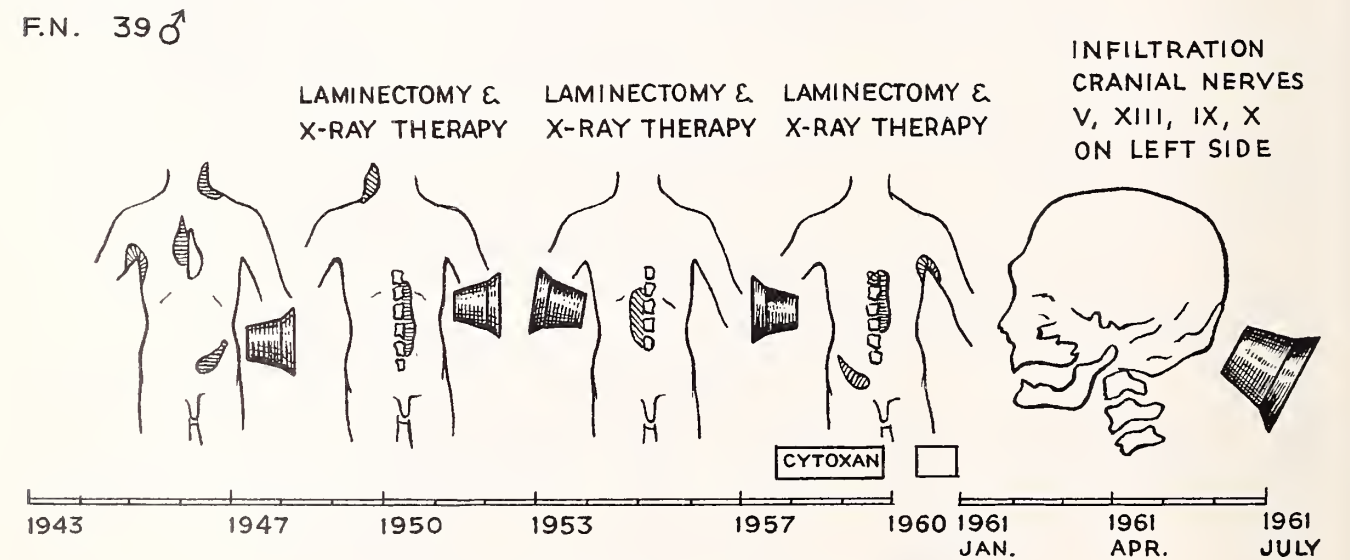
THE LYMPHOMAS

Radiotherapy has long been used in the treat-



CHRONIC MYELOID LEUKEMIA

Figure 5. Repeated doses of P³² controlled this case for nine months. In July, 1960, the leukemia became indistinguishable from acute myeloid leukemia, and uric acid precipitation in the ureters obstructed urine flow. A remission was achieved by means of 200 mg. of 6-MP/day for 14 days, and then 100 mg./day for eight days.



HODGKIN'S DISEASE

Figure 6. This durable schoolteacher required x-ray therapy to paraspinal masses five times, and surgical removal of dural and nerve-root masses three times during the 18 years of his disease. In April, 1961, meningeal Hodgkin's infiltration produced cranial-nerve palsies and head pain. Both problems responded to x-ray therapy.

ment of malignant lymphomas. Indeed, it is the mode of treatment with which the effects of other technics have been compared.⁹ Lymphomas are generally radiosensitive, requiring fewer roentgens for therapy than do the carcinomas. In most cases, conventional 250 kv. radiation machines are sufficient. Irradiation with cobalt or the betatron delivers higher doses to the target tissue, while sparing the skin, and these technics are available in a limited number of hospitals. Low-dosage surface radiation is effective in some cases of mycosis fungoides, leukemia cutis and lymphoma cutis.

Although there are many classifications of lymphomas, I have found it most suitable to define a case as either (1) Hodgkin's disease, (2) lymphosarcoma (regardless of degree of malignancy seen in the biopsy), or (3) reticulum cell sarcoma. Therapy will be described separately for each of these three groups. Giant follicular lymphoma will not be considered, for many hematologists feel that it represents only a prelude to either lymphosarcoma or reticulum cell sarcoma.

Hodgkin's disease. This diagnosis is established by excisional node biopsy. Bone marrow aspiration usually is of little assistance. Identifying the histologic subtype of Hodgkin's is often of only academic interest.

A distinction between paraganuloma and granuloma has little meaning in terms of treatment or prognosis. The sarcoma type of Hodgkin's, however, is rapidly fatal in most instances, though fortunately it is a rare type. If the excisional biopsy can encompass all the nodes that are involved, it should be performed as primary therapy in the hope that the disease can thus be eradicated. X-ray therapy is then directed to the involved area, and high doses are favored to forestall redevelopment. If nodes impinge on vital structures, radiotherapy induces more rapid shrinkage than chemotherapy. Initial node swelling in the first 12-24 hours of radiotherapy can be ameliorated by preparatory steroids. Figure 6 demonstrates long survival in Hodgkin's disease. Repeated x-ray therapy and laminectomies were necessary to maintain the integrity of the spinal cord in this case.

If more than three areas of the body require tumor shrinkage, generalized treatment is indicated, and nitrogen mustard is best designed for this procedure. The dose is 0.4 mg./kg., administered intravenously during a four-day period. It is given with the precautions usually accorded to a caustic drug. Premedication with anti-nausea

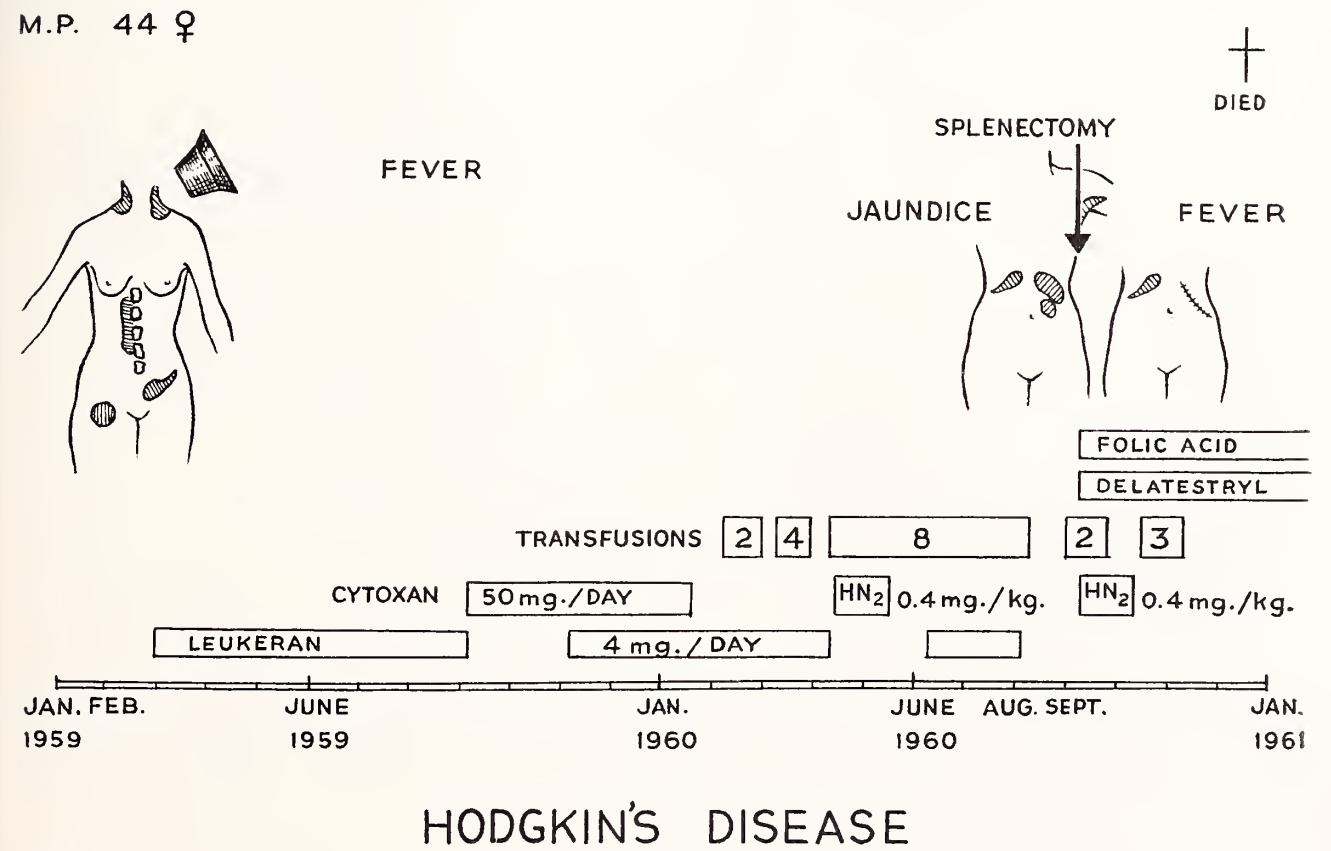


Figure 7. Local x-ray therapy, Leukeran and Cytosan contained this case until the drastic transfusion requirements necessitated a change in the regimen. Symptoms of active Hodgkin's disease, but not hemolysis, were controlled by 0.4 mg./kg. of nitrogen mustard. Splenectomy in September, 1960, decreased the hemolytic aspect of this disease. Accurate appraisal of the benefit of splenectomy was difficult because of the relentless course of the Hodgkin's, which terminated in pneumonia four months postoperatively.

drugs is important. Maximum bone-marrow depression occurs in two to four weeks, but seldom does a patient need to remain hospitalized to await this depression. Repeat courses should be withheld for six to 12 weeks. A long-range nitrogen mustard schedule is seldom feasible because of the varying course of the disease. For generalized Hodgkin's disease in which the node enlargement or symptoms are less severe, Leukeran may be used in doses of 0.2 mg./kg./day. Severe relapses of Hodgkin's may be resistant to nitrogen mustard or Leukeran. This resistance is an indication for 3-5 Gm. of Cytoxan, which is best administered as 300 mg./day, intravenously. Similarly resistant situations have been treated effectively with vincalcoblastine, 0.15 mg./kg. on two occasions. Caution in its administration is paramount because of toxic myelosuppression and neuropathy. A single dose may be repeated at weekly intervals for maintenance therapy.

During remission, maintenance therapy with Leukeran in doses of 2-4 mg./day, or Cytoxan in doses of 50-100 mg./day is indicated. It appears that development of new activity of the disease can thus be delayed. The complication of acquired hemolytic anemia due to hypersplenism, in Hodgkin's disease, can be seen in Figure 7.

When a relapse of Hodgkin's disease occurs dur-

ing pregnancy, radiotherapy may be used, with shielding for the fetal area and gonads. Chemotherapy at such a time is contraindicated.

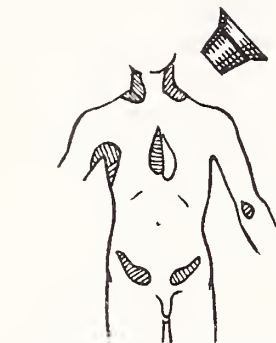
Lymphosarcoma. As in Hodgkin's disease, x-ray therapy is the treatment of choice for specific site involvement. For generalized lymphosarcoma, Cytoxan is the drug of choice. It usually produces an insignificant degree of thrombocytopenia, and initiates tumor shrinkage in two to seven days. The dosage is 3-5 Gm. during an intravenous course. Nausea can be ameliorated by a temporary interruption or a decrease in dosage. Alopecia occurs in approximately 25 per cent of cases, but usually fine hair begins to regrow within a few months. Nitrogen mustard can be substituted when resistance to Cytoxan develops. Steroids in large doses may give a temporary objective benefit in certain advanced cases. Maintenance therapy with oral Cytoxan or with Leukeran is indicated. Generally, patients tolerate smaller amounts than are used for maintenance doses in Hodgkin's disease. Figure 8 illustrates the control of lymphosarcoma with x-ray therapy until there is a need for generalized therapy.

Reticulum cell sarcoma. A dichotomy of clinical paths is typical of this disease. One group pursues a rapid course, virtually unresponsive to radiotherapy or the strongest attempts at alkylation.

C.V. 51 ♂

COMPLETE G.I. FLUOROSCOPIES
NEGATIVE

X-RAY THERAPY TO
MEDIASTINUM



SUCCESSIVE COURSES OF
X-RAY THERAPY TO
ALL ENLARGED NODES



X-RAY THERAPY

TRANSFUSIONS

4

CYTOXAN

LEUKERAN 2 mg./DAY

JAN. 1957 JUNE 1957 JAN. 1958 JUNE 1958 JAN. 1959 JUNE 1959 JAN. 1960 JUNE 1960 JAN. 1961

LYMPHOSARCOMA

Figure 8. Radiation therapy alone controlled this patient's disease for 2½ years. Leukeran was added in July, 1959, in an attempt to forestall recurrences. In June, 1960, enlarged nodes in the mediastinum produced the superior vena-caval syndrome. Mediastinal x-ray therapy halted the symptoms thus produced. Cytoxan was administered concomitantly because of the coexisting generalized disease.

The other group follows a chronic course which can be controlled satisfactorily by means of 50-100 mg. of Cytosan per day.

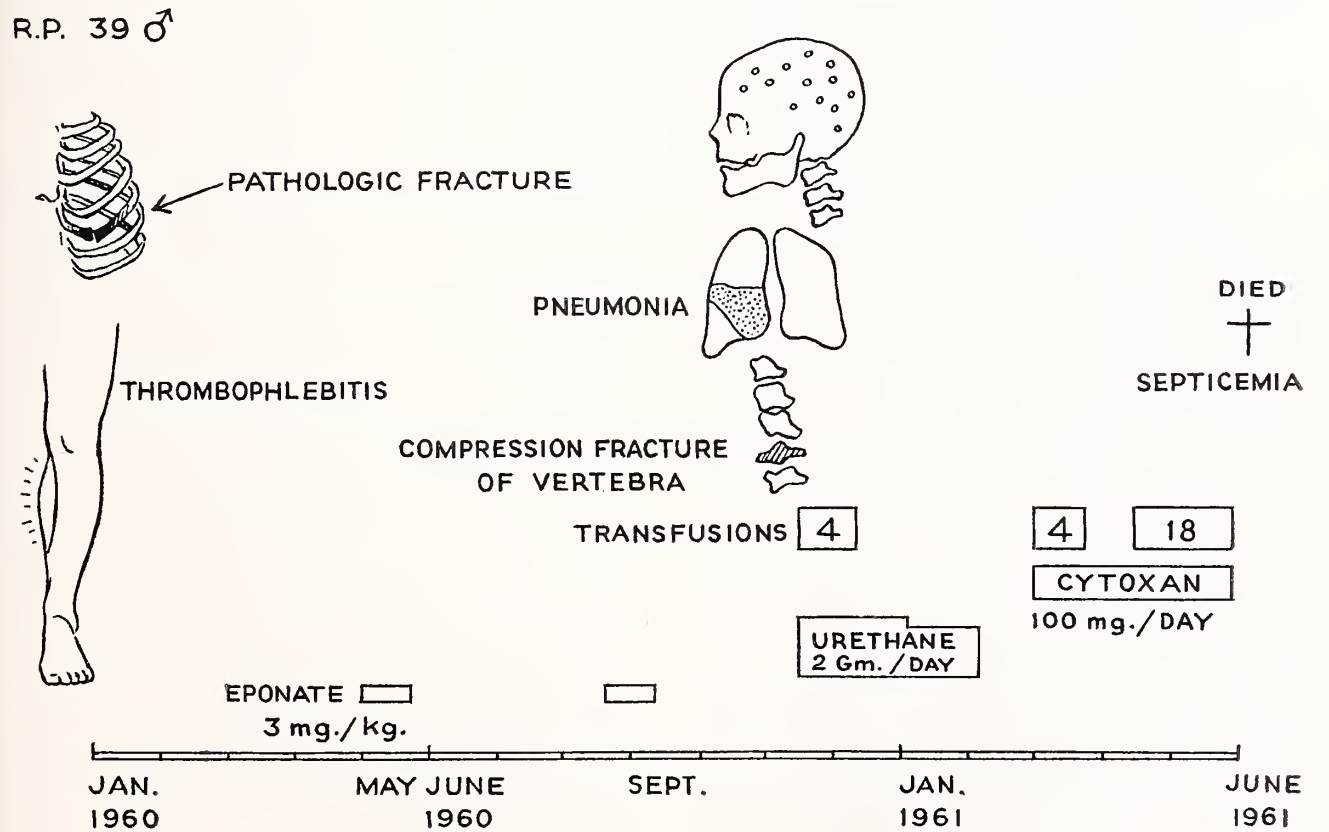
MULTIPLE MYELOMA

Urethane deserves only historical mention. The dose has been 1-2 Gm. orally per day, building up to a level of 3 Gm./day. Gastrointestinal intolerance, anesthetic propensity and hepatotoxic incidents have discouraged the use of this drug. Cytosan has been more favorably reported. This latter drug, previously discussed, is given intravenously, at first, to a total dose of 3-5 Gm. For painful periosteal infiltrations and for large fracture-prone osteolytic lesions, radiotherapy is superior treatment. Urethane may be given concomitantly with Cytosan. Cytosan is given orally for maintenance. Cytosan, x-ray therapy and Urethane relieve bone pain, but regrettably all three fail to alleviate the plasma-cell marrow infiltration, the hypercalcemia, the nephrotoxicity from hypercalcemia and abnormal proteins, the increased venous clotting and the immunologic crippling. Steroids depress the serum calcium level, and antibiotics supplant the infection-defense mechanism. Drugs and/or radiotherapy will be

insufficient without supplementary transfusions. Recently, the epoxide group of alkylating agents has been used in multiple myeloma without significant benefit. Multiple myeloma complications and the shortcomings of the methods used in treating them are demonstrated by the case shown in Figure 9.

SUMMARY

Good supportive care and management of reticuloendothelial malignancies have the same value now as they had prior to the introduction of radiotherapy and potent chemotherapeutic agents. Acute leukemia of childhood responds best to an antipurine drug (6-MP) in the initial attack. Steroids are best reserved for severe thrombocytopenia or future relapses. The bad prognosis of adult acute leukemia has been no more than insignificantly changed by 6-MP, anti-folic acid drugs and the alkylating agents. Close attention to the course of chronic leukemia assures earlier reversal of blastic transformations. Hodgkin's disease responds favorably to nitrogen mustard and x-ray therapy, and in advanced stages, to vincalukoblastine. Lymphosarcoma morbidity is appreciably de-



MULTIPLE MYELOMA

Figure 9. The diagnosis of multiple myeloma in this patient was suspected because of a pathologic rib fracture and thrombophlebitis. Blood and bone-marrow examinations confirmed the diagnosis. The infiltration by plasma cells of the bone marrow was not altered by two courses of Eponate (an epoxide alkylator), by Urethane or by Cytosan.

creased by the addition of Cytosan to the conventional measures.

Reticulum cell sarcoma often pursues a fulminating course, in spite of nitrogen mustard and x-ray therapy.

The bone pain in multiple myeloma is relieved by Cytosan, in spite of little alteration in the marrow infiltration and hyperglobulinemia.

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State University of Iowa
College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 45-YEAR-OLD HOUSEWIFE, admitted to the University Hospitals, stated that one month earlier she had become aware of a sense of pressure in the region of her left temple. It increased, and necessitated the use of analgesics. Two weeks before her admission, while working in her home, she had experienced sudden and severe occipital and posterior cervical pain, with neck stiffness. These symptoms had slowly disappeared, and she had been able to return to work until one week before her admission, when pain had recurred in the same location. Her neck was stiff, her balance was poor, and at any movement she experienced vertigo and nausea. She vomited repeatedly.

Examination disclosed a pale white woman in considerable discomfort from pain in her head and neck. Her blood pressure was 140/60 mm. Hg, her pulse was 80/min. and regular, her body temperature was normal and her respiratory rate was 20/min. and regular. Her speech was normal. She was able to walk without evident abnormality. Her neck was stiff to antiflexion. Her pupils were equal and the reflex reactions were normal. The extraocular movements were complete and conjugate, without nystagmus. There was no dysfunction of the facial muscles. Corneal reflexes

were present. Auditory acuity was normal to gross test. There were no cranial nerve signs. The scalp was normal, and no bruit was detected. The remainder of the neurologic examination disclosed no abnormalities. The heart sounds were normal, and there was no evidence of enlargement or abnormality. A pelvic examination was unrevealing.

The physical examination was reviewed the following day, and a firm, rounded, non-tender mass was felt beneath the left costal margin. The patient had had a tubal pregnancy necessitating a laparotomy 22 years before. Seven months before her admission, a lower bicuspid had been extracted, and the resultant cavity had been "cleaned surgically." A tooth had later been removed from her upper jaw.

Her complaints of severe headache and neck rigidity continued as diagnostic studies were pursued. Urinalysis at the time of her admission was normal except for 1+ sugar. Two subsequent fasting blood sugars were recorded as 63 and 72 mg. per cent. The hemoglobin was 13.6 Gm./100 ml., and the white blood cell count was 11,200/cu. mm., with a normal differential blood smear. The sedimentation rate was 57 mm./hr. The hematocrit was 42 per cent. The bleeding time was 2 min. 30 sec., and the coagulation time was 5 min. The prothrombin time was 14.5 min., with a control of

13.3 min. Clot retraction was regarded as complete, and the platelet count was 98,000/cu. mm. VDRL and Kolmer tests of her blood were negative. The bilirubin was 0.3 mg. per cent in 30 min., the transaminase was 7 mg. per cent and the bromsulphalein was 0 mg. per cent. The blood electrolytes were normal. The blood urea nitrogen was 8 mg. per cent, and the creatinine was 1.0 mg. per cent. The thymol turbidity was 5.2 units. The bone marrow was regarded as hyperplastic on examination. Agglutination tests for brucella and typhoid were negative. A blood culture failed to yield microorganisms. A preparation for lupus erythematosus was negative. A series of roentgenograms of the skull, chest and abdomen were interpreted as normal.

The patient was seen in consultation by the Department of Urology. The mass in the left upper quadrant was noted. Intravenous pyelography revealed prompt function of both kidneys, but the upper pelvis on the left did not fill well, and there was a loop in the mid-portion of the right ureter. It was felt that the films indicated an enlarged spleen, rather than an enlarged kidney.

An electroencephalogram was moderately abnormal, with slow alpha rhythm and shifting delta groups over the frontal and temporal regions. It was interpreted as non-focal. Lumbar puncture revealed a pressure of 140 mm. H₂O. The fluid was xanthochromic, with three lymphocytes. The Pandy test was graded 3+, and the total spinal-fluid protein was 270 mg. per cent.

Three days after the patient's entrance, bilateral carotid angiograms were carried out. On the left side, there was evidence of one or more small berry aneurysms close to the bifurcation of the internal carotid artery. There was some distortion of the vessels at the bifurcation on the left, suggesting the possibility of a clot or mass in that area. Abdominal distention and low grade fever developed on the following day, and a roentgenogram of the abdomen was interpreted as showing an ileus.

Further investigation of the abdominal mass was carried out, while the patient continued to have headaches of varying severity. A consultant believed the mass in the upper abdominal quadrant was kidney, rather than spleen. The consultant felt there was a firm mass or prominence measuring about 2.5×2.5 cm. in the left lobe of the liver. A systolic bruit was heard over this prominence. A detailed chart of pulse, respiration and blood pressure was kept throughout the patient's last week. The blood pressure mean ranged about 140/70, but there were a few readings in the neighborhood of 170/80 mm. Hg. The range of pulse rates was from 64 to 100/min., with no apparent trend of variations at any time. The respiratory rate varied from 14 to 24/min., with no evident trends. The temperature record showed minor elevations above normal.

Seventeen days after her entrance, the patient seemed somewhat less alert when the attending physicians made morning rounds. She was not particularly communicative, but it hadn't been her custom to say very much. In the morning of that day, she stated, "This is the end," and then she promptly became cyanotic and her respirations ceased. Her pulse weakened, but continued at 80/min. Mouth-to-mouth respiration was ineffective, and the patient was pronounced dead five minutes later.

SUMMARY OF CLINICAL DISCUSSION

Dr. Maurice W. Van Allen, Neurology: As has been our custom, we shall call upon a junior student, Mr. Mayner, for an analysis of the case.

Mr. Alfred Mayner, junior ward clerk: The symptoms, signs and course of this lady's illness were very typical of spontaneous subarachnoid hemorrhage. As further support for this diagnosis, we can cite her sudden, severe headaches and nuchal rigidity, the remission of those symptoms and their recurrence, associated with poor balance, vertigo and nausea with movement, and vomiting. The absence of other neurologic findings is compatible.

Further support is to be gleaned from her fever, leukocytosis and elevated erythrocyte sedimentation rate. The electroencephalogram was compatible, as were the cerebral spinal fluid findings, carotid angiograms and terminal respiratory failure. The lack of other neurologic findings, the remission of symptoms, the normal blood pressure and the xanthochromic cerebral spinal fluid tend to rule out other causes of headache.

The causes of spontaneous subarachnoid hemorrhage that can be ruled out fairly well are hypertension (by measurement), trauma (by history and physical examination), hematologic phenomena (by the various laboratory procedures listed), the collagen vascular diseases (by the absence of more constant findings that are usually relied upon for suspecting these entities), infarction (by the lack of a constant, specific neurologic deficit) and angioma (by the angiograms). Spontaneous subarachnoid hemorrhage into or from a primary or metastatic tumor cannot be ruled out and must be considered, since glioblastoma can present in this manner, and some metastatic tumors are highly vascularized.

Rupture of a saccular aneurysm is supported in this patient's case by her age, her normal blood pressure, her angiogram and the statistical incidence of saccular aneurysm as a cause for spontaneous subarachnoid hemorrhage. Whereas saccular aneurysms are usually congenital, they may also be mycotic (or atherosclerotic, but seldom without other evidence of atherosclerosis). The abdominal mass or masses could have been related or unrelated to the saccular aneurysm.

Cerebral congenital vascular anomalies can be associated with vascular anomalies in the liver,

spleen, kidney or other viscera—either angiomas, aneurysms or arteriovenous malformations or shunts. The bruit that was heard would bring these to mind, although the diagnosis would be much easier if there were cutaneous anomalies or evidence of more generalized involvement. However, if the saccular aneurysm was mycotic, then mycotic aneurysms could be found elsewhere, in such places as the liver, kidney or spleen, and with the most common cause of mycotic aneurysms—subacute bacterial endocarditis—one often finds splenomegaly.

The tooth extractions seven months before admission are much like the textbook etiology for this entity. Although many of the classic features were absent in this patient, perhaps a bacterial shower at the time of her tooth extraction resulted in bacterial vascular changes, without the development of colonies on the endocardium.

If the abdominal mass was a tumor and if the subarachnoid hemorrhage was a metastasis, then we must determine the origin of the abdominal mass in the area of the spleen, kidney or liver. In an individual of this patient's age group, the most common vascular tumor that metastasizes to the brain and liver and presents as a renal deformity, commonly in the upper pole, is the hypernephroma. Although an increased incidence of polycystic kidneys is also reported with congenital saccular aneurysms, they are usually bilateral and present a typical picture on intravenous pyelograms.

If the mass was unrelated to spontaneous subarachnoid hemorrhage and therefore unrelated to the patient's final illness, the differential diagnoses are legion, and far beyond the scope of this presentation. Although the combination of hyperplastic marrow and splenomegaly points toward hypersplenism, as yet unmanifested in the peripheral circulation, or to an aleukemic leukemia, and although the low blood-sugar values may have had some significance, though they weren't yet in the hypoglycemic symptom-producing range, one must consider either early pituitary damage secondary to the subarachnoid hemorrhage, or adrenal damage secondary to vascular anomalies, tumor or pressure.

In summary, my colleagues and I believe this lady had a spontaneous subarachnoid hemorrhage secondary to a ruptured saccular aneurysm, probably congenital but possibly mycotic, or possibly secondary to hemorrhage into a tumor or tumor metastasis. In the abdomen, we feel there were either vascular anomalies of the liver, spleen or left kidney, or splenomegaly primary or secondary to a bacteremia, or an asymptomatic abdominal tumor.

Dr. Van Allen: Thank you very much, Mr. Mayner, for a very able discussion.

Dr. Sahs will carry on the discussion.

Dr. A. L. Sahs, Neurology: This is the story of a progressive neurologic disorder in a 45-year-old woman. The symptoms began one month before

her admission, with a sensation of pressure in the left temple. The pain became more and more severe, and presented as an intermittent distress in the occipito-cervical region. By the time of her arrival at the hospital, the symptoms and signs pointed to a lesion in the posterior fossa. Although there was some degree of intermittency, the general picture was that of a progressive lesion which resulted in a terminal situation.

The finding of a mass beneath the left costal margin does not add materially to the picture at this moment, but it does arouse the suspicion that this lady had metastatic disease. It would be very unusual for an infection arising as the sequel of a dental extraction to lie dormant for six months, but stranger things than this have happened. Apparently the second dental extraction was uncomplicated.

Passing to the second paragraph of the protocol, we note that the white blood cell count and the sedimentation rates were elevated. The excretory urograms will be shown to you. *Dr. Van Epps*, do you want to demonstrate those roentgenograms now?

Dr. Eugene F. Van Epps, Radiology: The first slide is from an intravenous pyelogram taken at 15 minutes. It demonstrates a normal pelvis, collecting system and ureter (in its visualized portion) on the right. On the left, the renal outline appears normal. The upper pole collecting system is incompletely visualized, yet no gross abnormality is to be seen. One can note the splenic shadow in the left upper quadrant of the abdomen.

Mr. Mayner: Sir, could you point out the loop in the right ureter that is described in the protocol?

Dr. Van Epps: No, I can't see a loop on any of the films. I don't believe the loop mentioned in the protocol has any significance.

The next slide is a lateral projection of the skull following injection of contrast medium into the left internal carotid artery. It demonstrates an aneurysm of the internal carotid before its bifurcation. In the antero-posterior projection, the aneurysm is again seen in another plane. A basilar view again demonstrates the aneurysm. There is no tumor stain, and there is no displacement of vessels.

I should like to emphasize the need for injection of both internal carotid arteries in order to exclude multiple aneurysms.

Dr. Sahs: The xanthochromic spinal fluid with an elevated total protein content constitutes further evidence of a lesion of the posterior fossa. The normal spinal fluid pressure does not eliminate that possibility. One would assume that an untreated inflammatory process would be productive of an active pleocytosis, but such was not the case in this instance.

The demonstration of one or more small berry aneurysms near the bifurcation of the internal carotid artery introduces a new factor, particularly

since the possibility of a clot or mass is suggested by the distortion of the vessel. However, this is not the usual history of a ruptured aneurysm of the circle of Willis, for the onset was not so abrupt as ordinarily is seen, and we don't have the localizing signs that we might see in an aneurysm of the internal carotid artery—i.e., cranial nerve palsies, hemiplegia, aphasia and the like. Any distortion of the vascular tree may be related to the same process that is causing the difficulty in the posterior fossa.

The demonstration of a mass in the left lobe of the liver is very important, and makes the diagnosis of malignancy much more likely. Lesions of this type are apt to arise from the kidney, lung, breast, or occasionally from the skin or other areas. We must think of malignant melanomas, sarcomas and the like. The most logical source of this condition is a malignant tumor of the left kidney.

Dr. Frederic W. Stamler, Pathology: Were any roentgenograms made of the patient's chest?

Dr. Van Epps: They were interpreted as normal. I didn't bring them, since there was nothing abnormal to be seen in them.

Dr. Sidney E. Ziffren, Surgery: Dr. Sahs, did you think it significant that a systolic bruit was heard over the mass in the abdomen?



Figure 1. Hypernephroma involving upper medial portion of left kidney.

Dr. Sahs: Only that the neoplasm was very highly vascular.

Dr. Stamler: At autopsy, this patient did exhibit a congenital aneurysm of the left carotid artery. It was a small aneurysm, 4 or 5 mm. in diameter, just at the first intracranial bifurcation of the vessel. It was not ruptured. There was no evidence of recent hemorrhage or even of remote hemorrhage from this vessel. Instead, there was a large hemorrhagic tumor in the left cerebellar hemisphere, with compression of the brain stem. This was a metastasis from a large hypernephroma in the upper pole of the left kidney. There were also metastases to the liver, to the lungs, to the opposite adrenal, and to lymph nodes of the abdomen and thorax.

The gross photograph shows the left kidney and the tumor involving the upper pole. You see that in contrast to many hypernephromas of its size, this one caused relatively little deformation of the kidney (Figure 1). Most of the kidney was still in relatively normal condition, with the large mass attached superiorly and medially. The adrenal was displaced to the periphery of the tumor. The tumor was rather well circumscribed at the periphery and had a smooth surface. There were large vascular channels coursing through it, and it was mottled red and yellowish in color, with considerable hemorrhage, necrosis and cyst formation. Although not truly encapsulated, the tumor and the adjacent tissues were separated by a sharp line of demarcation.

The photograph of brain shows the large bulging mass of hemorrhagic tumor in the left cerebellar hemisphere (Figure 2). The slight discoloration of the meninges may have been the result of a past subarachnoid hemorrhage, but there is no evidence of active or recent bleeding. Notice how the brain stem is distorted, compressed and displaced to the opposite side by the cerebellar mass.

The tumor was almost completely hemorrhagic, with some bloodstaining and edema of the surrounding brain.

Next is a photograph of the primary renal lesion under rather high magnification. It shows the sharp line of demarcation between the tumor and the renal tissue (Figure 3). There is a zone of compression and fibrosis forming a pseudocapsule about the tumor, but you see that there are large, thin-walled vascular structures indicating the tumor's propensity for vascular invasion. In this case, a large vein did have tumor growing within its lumen.

There were a number of pulmonary metastases, the largest of which were about 1 cm. in diameter. These would not have been clearly apparent on radiographic examination. The high-power photomicrograph of the pulmonary metastasis (Figure 4) shows the large, pale cells that are typical of the clear-cell type of renal carcinoma. Its appearance was similar to that of the primary renal neoplasm and to those of the other metastases. This

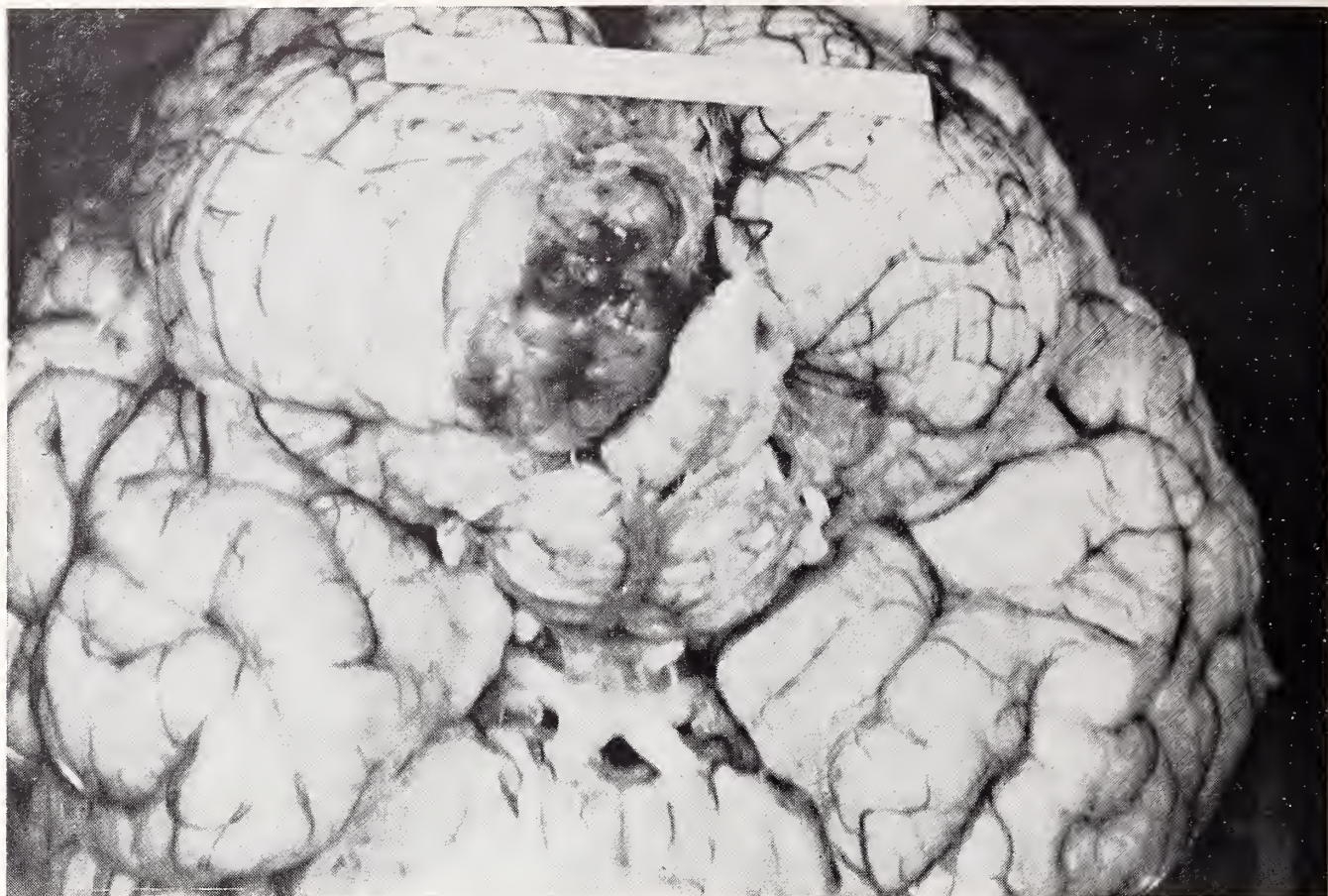


Figure 2. Metastatic tumor of left cerebellar hemisphere.

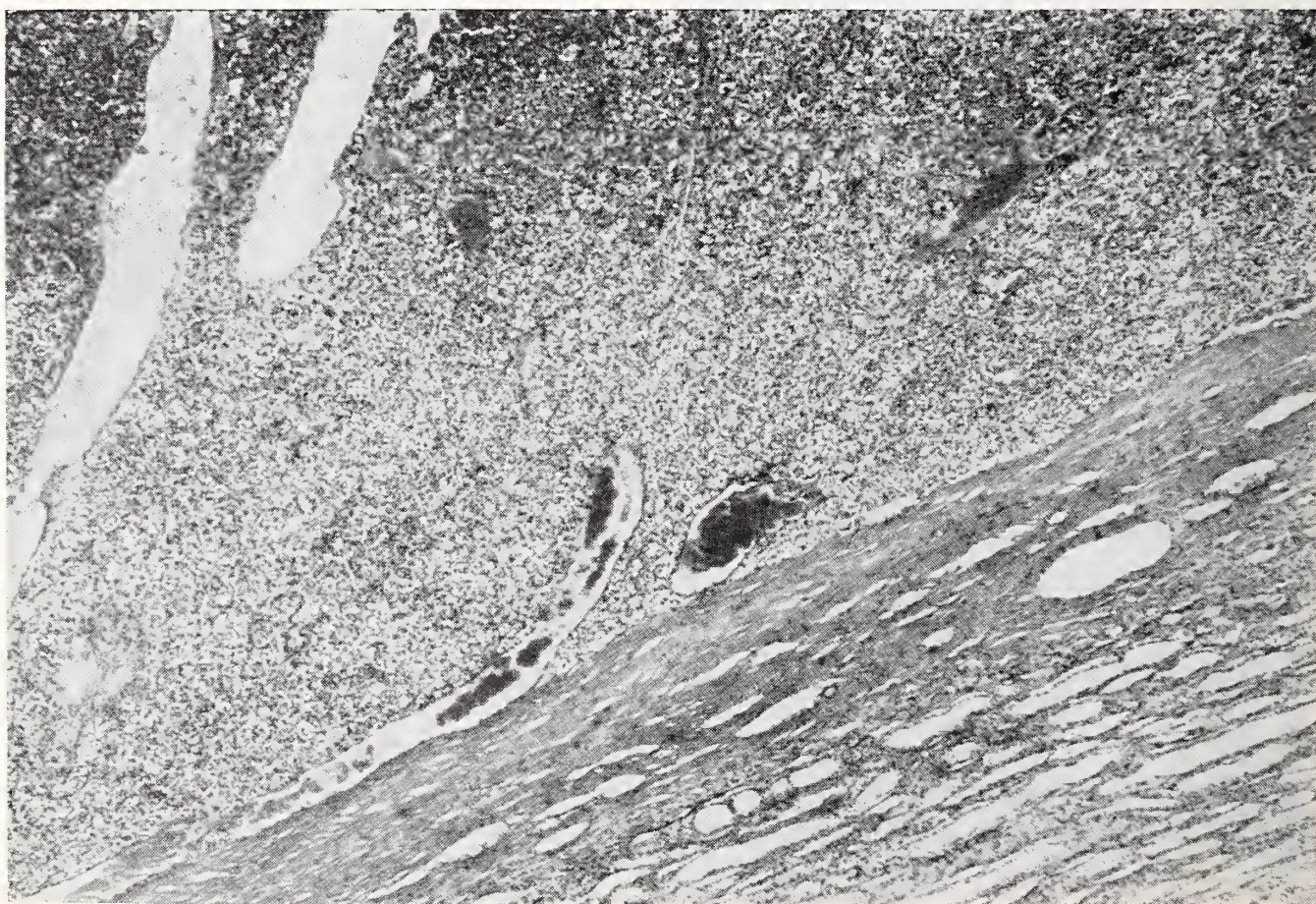


Figure 3. Microphotograph showing renal tumor above, with pseudocapsule and renal medulla below.



Figure 4. Microphotograph of pulmonary metastasis with large cells characteristic of clear-cell type renal carcinoma (hypernephroma).

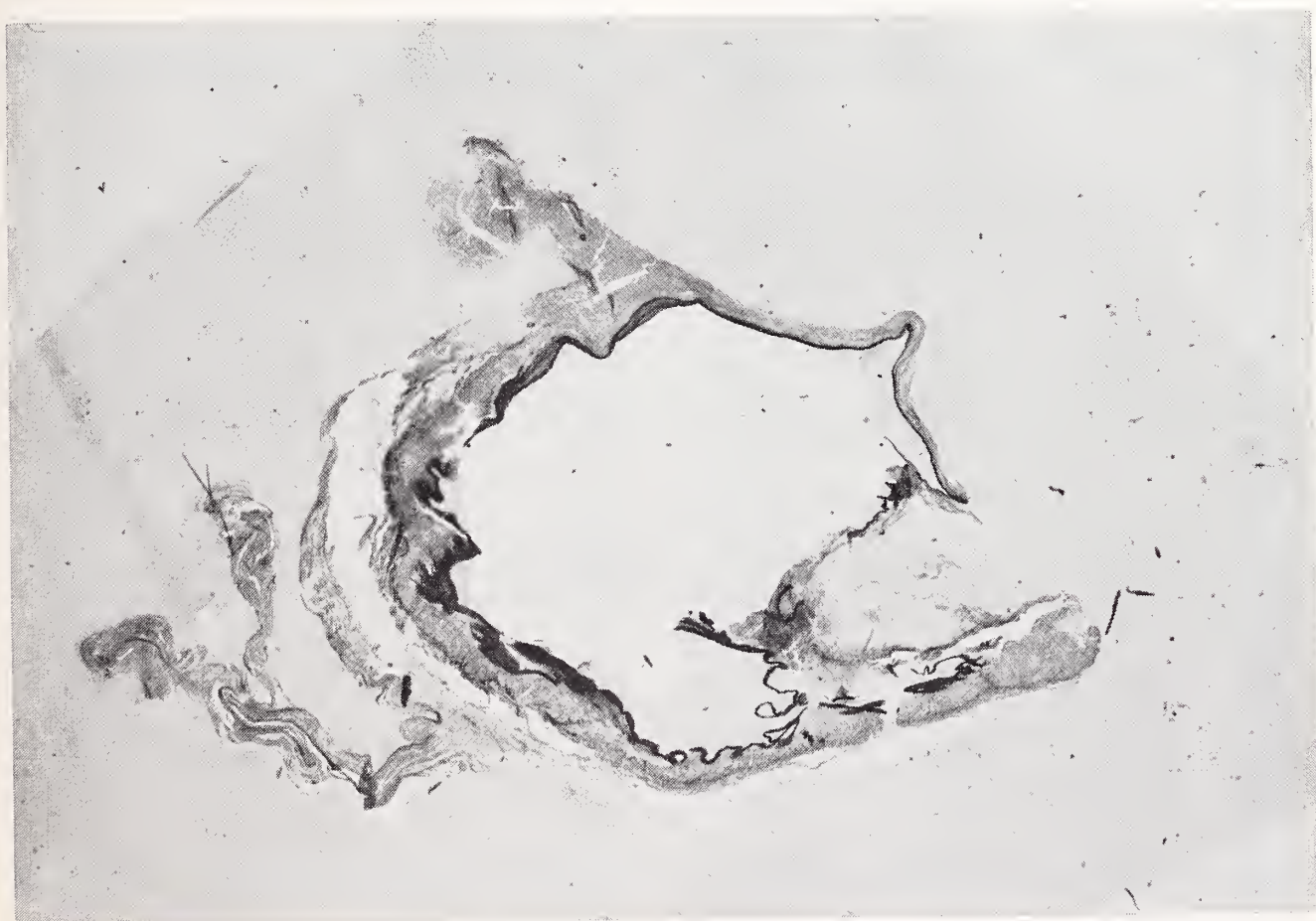


Figure 5. Photograph, slightly magnified, showing cross-section of aneurysm of left internal carotid artery.

is such a characteristic picture that wherever we find it we feel fairly confident that we are dealing with a neoplasm of renal origin, although occasional neoplasms of other origins may have a similar histologic appearance. We tend to retain the name *hypernephroma* for this tumor, as Grawitz proposed in about 1900, although his notion about its adrenal origin has been discarded.

The next picture is a low-power view of the aneurysm. Much of the wall of the vessel had become very attenuated, although it hadn't ruptured (Figure 5). Since an elastic tissue stain was used, the heavy black line represents the internal elastic lamella, and we see that it becomes abnormal in appearance as we follow the circumference of the vessel. It finally fades out as the vessel wall becomes very thin. This is one of the defects characteristically noted in a vessel in which an aneurysm has developed.

There were degenerative and calcific changes in the aneurysmal wall, in addition to the loss of elastic. Smooth muscle was also deficient, and had been largely replaced by collagenous connective tissues in the wall of the aneurysm.

It was our interpretation that the symptomatology here was related to hemorrhage from the cerebellar metastases—from the hypernephroma rather than from the aneurysm.

Dr. Van Allen: Before we turn our attention further to the difficulties of diagnosis here, I should like Dr. Culp to discuss the urologic aspects.

Dr. David A. Culp, Urology: From a review of our cases of hypernephroma, we found that 42 per cent of the patients have presented themselves with the classical triad of pain, hematuria and a mass in the abdomen. Although this is the most common picture, more than 50 per cent of the patients will present neither with all three parts of this triad nor with any portion of it. I think that the case now under discussion presents this problem quite clearly.

What is the clinical picture of these patients? What symptoms may they exhibit? There may be unexplained fever, unexplained anemia, weight loss, pathologic fracture, hemoptysis and, of course, the signs and symptoms of an intracranial lesion. We are well aware of this, and fortunately in most cases our excretory urograms are diagnostic. But as you can see from the pathologic specimen that has been shown you, there are occasions when the neoplastic lesion is attached to the kidney by such a small stalk that it does not create a deformity of the calyceal system or disrupt the normal outline of the kidney. In fact, I have had an opportunity to review these films with Dr. Van Epps, and from the excretory urogram the most we can say in this particular case is that incomplete filling of the upper pole is demonstrated. That alone, however, should prompt us to secure better visualization of the area.

Why, then, didn't we proceed with retrograde pyelograms? We could have performed them and still have been left with the same problem. The

upper-pole calyx could have been normal in this case, even by retrograde study, since the neoplasm didn't invade the renal parenchyma extensively. Therefore, we still would have been left with the same impression. This kidney was not the site of a hypernephroma. The individual who saw this patient felt that he could see enough on the pyelogram to say that it was not abnormal, and in view of the complications and problems that retrograde pyelograms involve, he elected not to do them in a patient with an intracranial lesion. His was a decision, a judgment, which must be made on all patients. It is sometimes a difficult one to make. A physician may be wrong in his decision not to do the examination on some occasions, as this case illustrates.

Another problem would have arisen if he had demonstrated a hypernephroma. What type of therapy should he have recommended? The chances are that with intracranial metastasis our therapy would have been palliative and limited to radiation. In conclusion, I think this case demonstrates the fact that our diagnostic procedures aren't always foolproof.

Dr. Van Allen: Thank you, Dr. Culp.

Dr. Sahs: would you care to comment further on any aspect of this case, now that we have the answer?

Dr. Sahs: The pain in the patient's left temple might still have been a manifestation of the stretching of the aneurysm in the absence of bleeding. This is a symptom which we sometimes encounter as the initial sign of a rupturing intracranial aneurysm. This is entirely possible in the light of the knowledge that we have obtained from the autopsy. It still is true that if she had experienced a rupture of this aneurysm, the onset would have been much more dramatic, and I think she would have had some associated phenomenon relative to the left internal carotid system. I have already mentioned those symptoms and signs. I would assume that there was no gross blood in the spinal fluid. The protocol says the fluid was xanthochromic and contained three lymphocytes. From the written protocol, I can't determine whether the fluid was acidified and whether or not we might have dissolved some red cells in the process of counting the lymphocytes in the spinal fluid. There might have been a small amount of gross blood in the spinal fluid that we removed during the process of acidifying the fluid before counting the cells under the counting chamber.

Dr. Van Allen: Two red cells, two lymphocytes.

Dr. Sahs: So this was not bloody spinal fluid. Then we have to try to understand the xanthochromia. Of course, this can be explained on the basis of transfer of blood pigment through the wall of a tumor in such a way that discoloration of the spinal blood occurs. In rare instances, the increase in protein will be of such magnitude as to make the fluid yellowish in color.

Dr. Van Epps: I should just like to state that a negative chest roentgenogram can mean many

things to many people. It means either that we did not see anything despite the fact that there was something to see, or actually that nothing abnormal was present. Suffice it to say that lesions in a favorable position surrounded by air and not obscured by heart, mediastinum, rib or diaphragm, can be seen in sizes from three to five millimeters. Lesions as large as a centimeter or more may not be visualized if they are in unfavorable positions. Therefore, factors of size, time and density are important in determining the radiographic visibility of a lesion. I have seen individuals in whom chest roentgenograms were normal despite the fact that metastatic carcinoma had replaced the mediastinum. Even the retrospectroscope does not find these lesions.

Dr. Van Allen: Thank you, Dr. Van Epps.

I should like to point out that cerebellar tumor can be a cause of sudden death. These patients may go for some time with increasing headaches, vomiting and generalized weakness, and then death may ensue very quickly. This case is important in demonstrating that there are various causes for bleeding in the subarachnoid space, and that all that bleed are not aneurysms. Diagnosis was particularly difficult in this instance because the lesion commonly associated with subarachnoid hemorrhage was looked for and found. Dr. Locksley has had considerable personal experience with aneurysms, as well as a large experience in analyzing cases in the Aneurysm Registry. I have asked him to tell us how we can determine whether a demonstrated aneurysm is the source of a subarachnoid hemorrhage in a given instance.

Dr. H. B. Locksley, Surgery: In nearly all cases there is a shadow of doubt as to whether an angiographically demonstrated lesion is the source of subarachnoid hemorrhage (SAH). Statistically, that shadow is a fairly faint one. It is estimated that the incidence of subarachnoid hemorrhage in the general population is between 0.5 and 2.0 per cent, and for convenience in calculation let's assume it is 2.0 per cent. From clinical and pathologic studies, it is known further that about half of the patients with SAH—i.e., 1.0 per cent of the population—have cases that are a consequence of intracranial aneurysms. The other 1.0 per cent of the population bleed from a variety of lesions related, for example, to congenital vascular anomalies, arteriosclerotic or hypertensive vascular disease, brain tumor, toxemia of pregnancy, blood dyscrasia, meningo-vascular lues or, more recently, a complication of anticoagulant therapy. The probability of a patient's coming in with SAH due to aneurysm is, as we have said, about 1 per cent. If we demonstrate an aneurysm by angiography and then ask, as Dr. Van Allen has done, "Was this aneurysm the source of bleeding?" we are, in effect, postulating two lesions or diseases. The likelihood of any given person's simultaneously having an aneurysm and another disease capable of producing subarachnoid hemorrhage is .01 (for aneurysm) \times .01 (for the other disease) = .0001, or

in other words, one chance in ten thousand. That is as closely as I can estimate the likelihood of our mistaking a demonstrated aneurysm as the source of bleeding when in fact there is another cause. Applying this reasoning to the present case, I can say that if we concede this patient had a subarachnoid hemorrhage and if it turns out that her aneurysm was a purely incidental finding, she is one case in ten thousand.

Patients who present multiple intracranial aneurysms pose more difficult but commoner problems as regards identification of the source of bleeding. This multiplicity occurs in about 15 per cent of our aneurysm cases. It is often difficult to determine which of a patient's two, three or four aneurysms actually bled. This is a matter of crucial importance in selecting the most appropriate surgical treatment. In the final analysis, we can identify the source of bleeding with absolute certainty only by direct observation either at operation or at autopsy. In most cases, however, there are clues that point to the offending aneurysm with a compelling probability. Dr. Sahs has mentioned neighborhood neurologic signs such as third cranial nerve palsy, visual field defects, and lateralization based on hemiparesis and speech disorders. Often, the parent vessel of the bleeding aneurysm can be seen in the angiogram to be narrowed by local spasm, and sometimes one can find a slight to moderate displacement of the parent vessel, indicative of a small hematoma in the neighborhood of the aneurysm that bled. Thus, this spectre of uncertainty that Dr. Van Allen has properly brought to our attention yields reasonably well to systematic neurologic and angiographic analysis.

Dr. Van Allen: Thank you, Dr. Locksley. As I reread the protocol and interpret Dr. Van Epps' remarks, I judge that none of these angiographic signs were demonstrated.

Dr. Ziffren: I should like to ask two questions. First, what was the clinical diagnosis? Second, did anyone pay any attention to the consultant who insisted that the lesion was in the kidney?

Dr. Van Allen: In his conclusion, the consultant said: "Possible lower pole of a normal left kidney, probably normal size liver, question hemangioma, aneurysm of liver or partial thrombosis. Continue treatment for her primary problem." Apparently at the time the patient came in, it was felt she might have polycystic kidneys, which are known to be associated with aneurysm and subarachnoid hemorrhage. It was during the course of diagnostic efforts directed at investigation of the mass that the patient rather suddenly died.

Dr. Henry Hamilton, Internal Medicine: Was there papilledema?

Dr. Van Allen: Papilledema was not present. The spinal fluid pressure was normal, as measured in the lumbar subarachnoid space.

Unidentified questioner: I should like to ask Dr. Van Epps whether, knowing that this patient had hypernephroma, he now can find that the x-rays

show any evidence of lesion in the bony skeleton.

Dr. Van Epps: No, there was no evidence of metastasis to the skeleton or to the lungs on roentgenography.

Dr. John A. Gius, Surgery: I should like to ask Dr. Stamler whether the conditions are more favorable for growth of metastases in the brain than they are in the lungs.

Dr. Stamler: I think we have very little information that would help us to answer that question. There have been some studies made in an attempt to gauge the growth rates of disseminated tumors in various organs, but I don't believe any well established patterns have been discovered. We do know that in the case of hypernephroma metastases develop in certain fashions, although there are great variations. The fascicle on renal tumors at the Armed Forces Institute of Pathology has reported that over 50 per cent of cases coming to autopsy have lung metastases, and that over one third of the cases have metastases to the liver, to lymph nodes or to bone. Other organs are commonly involved, too. Some 18 or 19 per cent have adrenal involvement, and although we tend to think of this as a tumor often metastasizing to the brain, only 6.6 per cent of cases in the study to which I refer had brain metastases at the time of autopsy. In regard to this particular tumor, I don't know of any precise information we have relative to graded growth in various organs. We see very large metastases, at times, in the liver and lungs. We see tremendous variations, so I think that as with other tumors there must be differences among the individuals involved. In some cases of neoplastic dissemination, we see a tremendous growth of tumor in the liver, and little if any in the lungs. In the next case, we may see the lungs simply riddled with tumor growth, and little or none in the liver. There is no standard pattern that we can demonstrate. There seems to be a great deal of individual variation.

Dr. Saks: Dr. Stamler, I am always concerned about the very large metastasis which, in this case, apparently came up by way of the left vertebral artery. How does the tumor embolus get into the vertebral artery?

Dr. Stamler: In the retroperitoneal tissues, there are venous channels connecting the retroperitoneal vessels with the paravertebral venous plexus. With changing pressures within the abdomen or the thorax, retrograde flows of blood can occur and may cause direct dissemination of tumor cells to the brain.

Dr. Saks: It apparently entered into the venous system, but where does it go to get to the vertebral artery? Or does it actually enter the venous system of the brain?

Dr. Stamler: Some experimental evidence supports the concept that with pressure changes from coughing or straining at stool, tumor cells may be carried through venous channels in a retrograde fashion. I think that it can occur in a more

circuitous fashion. This tumor was shown to have invaded a large vein and thus could disseminate quite widely, since we know that tumor emboli can pass through the pulmonary capillary bed. These capillaries are unusually large, and thus not only individual cells but clumps of cells can pass through them and go on to distant sites in this fashion.

Dr. Van Allen: I believe that Dr. Gius has investigated pathways of metastasis.

Dr. Gius: With respect to dissemination of metastases to distant parts of the body, and especially where the lung is uninvolved and therefore appears to have been bypassed, the vertebral-venous system has been given considerable attention in the literature. The writings go back more than 100 years, but in recent times the vertebral-venous system appears to have been rediscovered by Dr. Batson, the famed anatomist of the University of Pennsylvania Graduate School. This system of veins, which is often called "Batson's plexus," extends from the dural venous sinuses of the skull, along the course of the skeleton, and down to the coccyx. It includes the veins about the bones of the shoulder girdle and the pelvic girdle. There are innumerable communications between the veins of the vertebral system and the caval system. The blood in the vertebral system is probably out of the "main stream," so to speak, and perhaps is under lower than systemic venous pressure and thus is subject to reversal of flow. The veins of this system are generally free of valves. For these reasons, certain physiologic stresses such as those caused by coughing, straining, lifting, etc. may cause cancer cells floating in the systemic veins to be carried into the vertebral veins, and then to bone where they lodge and grow. Skeletal metastases in the absence of lung metastases are most often encountered in cancer of the breast, prostate, thyroid and kidney.

This is the hypothesis regarding "paradoxical" metastases that Batson propounded and which certain experimental work appears to support. But there are other, more recent observations which seem to me to throw considerable doubt on the validity of this concept. For example, about 30 per cent of patients with breast cancer have been found to have tumor emboli in the veins draining the affected breast. Studies of patients with other types of tumors have likewise revealed that the venous circulation is "seeded" more frequently and in greater degree with cancer cells than we have been accustomed to believe.

The fate of these cells in the circulation is incompletely understood, but undoubtedly most of them are destroyed or find environments in which conditions are unfavorable for their growth. Some may pass through A-V shunts in the lung and be carried to distant areas of the body, including the skeleton. Perhaps the bones offer a "soil" which is particularly favorable for the growth of cancer cells which have arisen in particular cells. I think

that our knowledge of the mechanisms of metastasis is quite incomplete, and that currently much of it is based upon speculation.

Dr. Carl L. Gillies, Radiology: I wonder whether we may see that radiograph again. I think there is a bulge in the upper pole of the left kidney not seen on the right, and I also think the transverse diameter is larger on the left than on the right. I thought there was a bulge medially in the upper pole of the left kidney.

Dr. Stamler: The mass was medial.

Dr. Gillies: The medial border of the right kidney appeared straight, whereas there seemed to be a little bulge on the medial border of the upper pole of the left kidney.

SUMMARY OF NECROPSY FINDINGS

1. Adrenocarcinoma, clear-cell type (hypernephroma), left kidney
 - a. Metastasis to cerebellum, with hemorrhage and medullary compression
 - b. Metastases to liver, lungs, lymph nodes and right adrenal gland
2. Congenital berry aneurysm, intracranial portion, left internal carotid artery

3. Cerebral edema, moderate
4. Adematous polyp, colon.

STUDENTS' DIAGNOSES

1. Spontaneous subarachnoid hemorrhage due to
 - a. ruptured aneurysm congenital or mycotic or
 - b. hemorrhage into a tumor or metastasis
2. Vascular anomaly of liver, spleen or kidney or

Splenomegaly

- a. primary or secondary to
- b. bacteremia
3. Asymptomatic abdominal tumor.

DR. SAHS' DIAGNOSES

1. Neoplasm in posterior fossa, either a metastasis or a primary tumor
2. Malignant tumor of left kidney
3. Congenital berry aneurysm of internal carotid artery.

CLINICAL DIAGNOSES

1. Ruptured berry aneurysm
2. Possible polycystic kidney.

Coming Meetings

IOWA

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| Feb. 12-15 | Refresher Course for the General Practitioner (S.U.I. College of Medicine and the Iowa Chapter of the American Academy of General Practice). Medical Amphitheater, University Hospitals, Iowa City |
| Feb. 21-22 | Annual Meeting of the Sioux Valley Medical Association. Sheraton-Martin Hotel, Sioux City |
| Mar. 9 | Second Annual Orthopaedic and Rehabilitation Seminar. Younker Memorial Rehabilitation Center, Des Moines |
| Mar. 12-13 | Hernia (S.U.I. Department of Surgery). Medical Amphitheater, University Hospitals, Iowa City |
| Mar. 27 | Infertility and Endocrinology (S.U.I. College of Medicine). University Hospitals, Iowa City |

CONTINENTAL U. S.

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| Feb. 2 | Dermatology. Presbyterian Medical Center, San Francisco |
| Feb. 2-5 | Fifty-ninth Annual Congress on Medical Education (Council on Medical Education and Hospitals of the AMA, the Advisory Board for Medical Specialties and the Federation of State Medical Boards of the U. S.). Palmer House, Chicago |
| Feb. 4-5 | Advanced Electrocardiology. University of Nebraska College of Medicine, Omaha |
| Feb. 6-9 | American College of Radiology. Drake Hotel, Chicago |
| Feb. 7-8 | Two Common Killers: Cardiovascular Disease and Cancer (Regional Postgraduate Institute sponsored by the California Medical Association in cooperation with Loma Linda University School of Medicine). El Mirador Hotel, Palm Springs, California |
| Feb. 7-9 | Society of University Surgeons. Seattle |
| Feb. 8-9 | Fourth Annual Congress of the Professions (Michigan Association of the Professions). Jack Tar Hotel, Lansing, Michigan |
| Feb. 9-10 | Recent Advances in Drug Therapy. University of California, San Francisco |
| Feb. 11-13 | Eleventh Annual Session of the Institute on Metabolic Research. Highland-Alameda County Hospital, Oakland, California |

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| Feb. 11-15 | Modern Physiological Concepts of Cardiovascular Disease (American College of Physicians). Presbyterian Medical Center, San Francisco |
| Feb. 11-15 | Medical Surgical Clinical Symposia: Feb. 11, Endocrinology; Feb. 12, Medical Problems in Surgical Patients; Feb. 13, Psychiatry; Feb. 14, Gastroenterology; Feb. 15, Pulmonary Disease. University of Kansas Medical Center, Kansas City, Kansas |
| Feb. 12-14 | Growth and Development—Management of Common Behavior Disturbances. Medical College of Georgia, Augusta |
| Feb. 14-15 | Recognition and Treatment of Psychoneurotic Disorders by the General Practitioner. University of Nebraska College of Medicine, Omaha |
| Feb. 14-16 | American Society of Clinical Pathologists. New Orleans |
| Feb. 15-16 | Clinics in Neurology. University of California, San Francisco |
| Feb. 15-17 | American College of Physicians. Hotel Del Coronado, Coronado, California |
| Feb. 16-17 | Eighth Spring Postgraduate Meeting of the Los Angeles County Medical Association. Statler Hilton Hotel, Los Angeles |
| Feb. 18-20 | Radiology and Radioactive Isotopes. University of Kansas Medical Center, Kansas City, Kansas |
| Feb. 18-Mar. 1 | Surgical Technic. Cook County Graduate School of Medicine, Chicago |
| Feb. 19 | Prevention and Treatment of Athletic Injuries (Neosho County Medical Society and the University of Kansas School of Medicine). The Southeast Kansas Tuberculosis Hospital, Chanute, Kansas |
| Feb. 21-23 | Proctology and Sigmoidoscopy. University of California at Los Angeles |
| Feb. 22-23 | Hearing and Speech (University of Kansas Medical Center). Battenfeld Auditorium, Kansas City, Kansas |
| Feb. 25-Mar. 1 | Course for Physicians in General Practice. University of California, San Francisco |
| Feb. 25-Mar. 1 | Management of Common Fractures and Dislocations. Cook County Graduate School of Medicine, Chicago |
| Feb. 25-Mar. 1 | General Surgery. Cook County Graduate School of Medicine, Chicago |

- Feb. 27 **Midwinter Symposium on Heart Disease (Los Angeles County Heart Association).** Ambassador Hotel, Los Angeles
- Feb. 27-Mar. 1 **Management of Trauma.** University of Colorado Medical Center, Denver
- Feb. 28-Mar. 1 **Useful Laboratory Examinations and Their Interpretation.** University of Nebraska College of Medicine, Omaha
- Feb. 28-Mar. 3 **Thirteenth Annual Convention of the American College of Cardiology (Joint meeting with the Los Angeles County Heart Association).** Ambassador Hotel, Los Angeles
- Feb. 28-Mar. 3 **College of American Pathologists.** Rice Hotel, Houston, Texas
- Mar. 1-2 **Operable Heart Disease.** Presbyterian Medical Center, San Francisco
- Mar. 2-3 **Multiple Injuries and Trauma.** University of California, San Francisco
- Mar. 3-7 **Thirty-first Annual Alumni Postgraduate Convention of Loma Linda University School of Medicine.** White Memorial Medical Center, Los Angeles
- Mar. 4-7 **Twenty-sixth Annual Meeting of the New Orleans Graduate Medical Assembly.** Roosevelt Hotel, New Orleans
- Mar. 4-8 **Physical Methodology in Medical Research (American College of Physicians).** Massachusetts Institute of Technology, Cambridge
- Mar. 4-8 **Surgery of Colon and Rectum.** Cook County Graduate School of Medicine, Chicago
- Mar. 4-15 **Basic Internal Medicine.** Cook County Graduate School of Medicine, Chicago
- Mar. 4-15 **Board of Surgery Review, Part II.** Cook County Graduate School of Medicine, Chicago
- Mar. 7-8 **Trauma From Birth to Death (UCLA School of Medicine).** California Medical Association's West Coast Counties Institute, Del Monte Lodge, Pebble Beach, California
- Mar. 8-9 **National Medicolegal Symposium (AMA).** Americana Hotel, Miami Beach, Florida
- Mar. 9 **Office Diagnosis.** Presbyterian Medical Center, San Francisco
- Mar. 11-13 **Gallbladder Surgery.** Cook County Graduate School of Medicine, Chicago
- Mar. 11-13 **Pediatrics (University of Kansas Medical Center).** Battenfeld Auditorium, Kansas City, Kansas
- Mar. 11-13 **Clinical Reviews (Mayo Clinic and the Mayo Foundation for Medical Education and Research).** Theater, Mayo Civic Auditorium, Rochester
- Mar. 11-14 **Sectional Meeting for Doctors and Nurses (American College of Surgeons).** Penn-Sheraton and Pittsburgh Hilton Hotels, Pittsburgh
- Mar. 11-22 **Obstetrics, General and Surgical.** Cook County Graduate School of Medicine, Chicago
- Mar. 12-14 **Gynecologic Problems in Private Practice.** Medical College of Georgia, Augusta
- Mar. 12-14 **American Academy of Allergy.** The Queen Elizabeth Hotel, Montreal, Canada
- Mar. 13-17 **Diagnostic Radiology.** University of California, San Francisco
- Mar. 14-15 **Gastroenterology.** University of Nebraska College of Medicine, Omaha
- Mar. 14-16 **Surgery of Hernia.** Cook County Graduate School of Medicine, Chicago
- Mar. 16-17 **Cancer.** Presbyterian Medical Center, San Francisco
- Mar. 16-21 **Fifteenth Annual Teaching Seminar of the International Academy of Proctology.** Las Vegas, Nevada
- Mar. 17-22 **American College of Allergists.** New York
- Mar. 18 **Spring Hospital Workshops (Kansas City Southwest Clinical Society in cooperation with the hospitals of Greater Kansas City and the Kansas City Chapter of the AAGP).**
- Mar. 18-19 **Cardiac Auscultation.** University of Kansas School of Medicine, Kansas City, Kansas
- Mar. 18-20 **Clinical Reviews (Mayo Clinic and Mayo Foundation for Medical Education and Research).** Theater, Mayo Civic Auditorium, Rochester
- Mar. 18-21 **American Industrial Health Conference.** Sheraton Park Hotel, Washington, D.C.
- Mar. 18-22 **Electrocardiography.** Cook County Graduate School of Medicine, Chicago
- Mar. 18-22 **Recent Advances in Cardiovascular Disease (American College of Physicians).** Mount Sinai Hospital, New York City
- Mar. 18-29 **Basic Principles in General Surgery.** Cook County Graduate School of Medicine, Chicago
- Mar. 19 **Venous Disorders of the Extremities (Neosho County Medical Society and the University of Kansas School of Medicine).** The Southeast Kansas Tuberculosis Hospital, Chanute
- Mar. 21-22 **Third Annual Convention of the International College of Applied Nutrition.** Huntington-Sheraton Hotel, Pasadena, California
- Mar. 22-23 **The Broadening Scope of Psychosomatic Medicine.** UCLA, Los Angeles
- Mar. 23 **Fractures.** Presbyterian Medical Center, San Francisco
- Mar. 24-27 **Annual Session of the California Medical Association.** Ambassador Hotel, Los Angeles
- Mar. 24-27 **Missouri State Medical Association's Annual Meeting.** Kansas City
- Mar. 24-28 **International Anesthesia Research Society.** Americana Hotel, Bal Harbour, Florida
- Mar. 24-29 **American College of Allergists Graduate Instructional Course and 19th Annual Congress.** Americana of New York, New York City
- Mar. 25-29 **Vaginal Approach to Pelvic Surgery.** Cook County Graduate School of Medicine, Chicago
- Mar. 25-29 **Lower Extremities Prosthetics.** UCLA, Los Angeles
- Mar. 27-28 **Practical Aspects of Difficult Endocrine Problems (University of Southern California).** Los Angeles County Hospital, Los Angeles
- Mar. 28 **Obstetrics and Gynecology.** University of Nebraska College of Medicine, Omaha
- Mar. 28-29 **International Symposium on the Evolution of the Atherosclerotic Plaque.** Palmer House, Chicago
- Mar. 28-30 **Fourth Oklahoma Colloquy on Advances in Medicine: Pulmonary Insufficiency (Oklahoma Tuberculosis Association).** University of Oklahoma Medical Center Auditorium, Oklahoma City
- Mar. 29-31 **American Society of Internal Medicine.** Denver
- Mar. 29-Apr. 5 **American Academy of General Practice.** Chicago
- Mar. 30-31 **Pediatrics, Obstetrics, Gynecology, Surgery (UCLA).** Cedars of Lebanon Hospital, Los Angeles

ABROAD

- Feb. 20-24 **International Congress on Diseases of the Chest (Council on International Affairs, American College of Chest Physicians).** New Delhi, India. Write: Mr. Murray Kornfeld, Executive Director, 112 E. Chestnut Street, Chicago 11
- Feb. 20-24 **Seventh International Congress on Diseases of the Chest (American College of Chest Physicians).** New Delhi, India
- Feb. 23-27 **Pan American Doctors' Club.** Hacienda San Miguel Regla, Huasca, Hidalgo, Mexico. Write: Dr. Robert E. Reagan, Secretary, 232 Windsor Rd., Benton Harbor, Michigan
- Feb. 20-Mar. 2 **Clinical Postgraduate Program (UCLA University Extension and the School of Medicine, in cooperation with the National Autonomous University of Mexico School of Medicine).** Mexico City. Write: Continuing Education in Medicine and Health Sciences, UCLA Medical Center, Los Angeles 24
- Mar. 16-Apr. 7 **Clinical Postgraduate Program in Israel and Greece (UCLA in cooperation with Hebrew University Hadassah Medical School, Tel-Hashomer Hospital and Beilinson Hospital).** Jerusalem and Tel Aviv, Israel; Athens and Epidaurus, Greece. Write: Continuing Education in Medicine and Health Sciences, UCLA Medical Center, Los Angeles 24
- Apr. 12-May 4 **Clinical Postgraduate Program in Japan and Hong Kong (UCLA in cooperation with Tokyo University School of Medicine, the Atomic Bomb Casualty Commission at Hiroshima, Hong Kong University School of Medicine and the Hong Kong Department of Health).** Write: Continuing Education in Medicine and Health Sciences, UCLA Medical Center, Los Angeles 24
- Apr. 16-24 **International Meeting on Foreign Immunology, Medicine and Pathology (3rd), and International Meeting on Forensic Immunology and Toxicology (1st).** London. Write: Joseph W. Spelman, M.D., Philadelphia Dept. of Public Health, 13th and Wood Streets, Philadelphia 7
- Apr. 18-20 **European Congress of Neurosurgery.** Rome. Write: Beniamino Guidetti, M.D., viale Università, 30, Rome

(Continued on page xxxi)



"Auto-Immune Diseases"

In the 1950's it was the style to label diseases of mysterious origin as "collagen diseases." This euphonious term was used frequently by medical practitioners to cover up vast areas of ignorance. The concept behind the term was that collagen diseases were diseases of the interstitial or collagen-containing tissues, but although the term sounded beautiful, proof of the essential hypothesis was difficult, so that today it is felt that the collagenous tissues are not *primarily* involved in these diseases. The participation of the collagenous tissues may be secondary to some other etiologic agent. We are left then, with the necessity of supplanting one euphonious term with another.

Luckily the term *auto-immune disease* has been revived just in time, and now many conditions, from ulcerative colitis to chronic hepatic and renal disease, rheumatoid arthritis, periarteritis nodosa, and idiopathic thrombocytopenia, have been ascribed to an "auto-immune" mechanism. Again, this term is esoteric in connotation, and again, the proof of etiologic relationship is difficult of proof.

Kraft, Bregman and Kirsner in a recent essay¹ have attempted to wrestle with this problem in ulcerative colitis. They quote Witebsky *et al.* in suggesting a series of "Koch's postulates," if you will, for criteria applicable to the auto-immune diseases. (1) It is necessary to demonstrate free circulating antibodies that are active at body temperature, or cell-bound antibodies by indirect means. (2) One must recognize the specific antigen against which this antibody is directed. (3) One must produce an antibody against the same antigen in experimental animals. Finally, (4) in the corresponding tissues of an actively sensitized animal, one must note the appearance of pathologic changes that are basically similar to those in the human disease.

The gist of the article by the above mentioned authors is that such proof is difficult to obtain in ulcerative colitis (and by inference, in other diseases). Such investigative tools as "tanned eryth-

rocyte hemagglutination," "phenol-water" extracts of tissue, "agar gel diffusion," "microsomal extractions of mucosa," "Freund's adjuvant" and "immunofluorescent staining" are only a few of the methods which have been used to delve into this problem. The mere mention of the above terms should make us realize that the problem is extremely complex, and that the new technics are likewise.

We may conclude from their article that although the term *auto-immune* sounds nice, we should be a little reticent to ascribe the etiology of all our mysterious diseases to this "new" mechanism. For the present, we can only doff our hats to those with ideas—those investigators who are working on the problem—and hope that they will come up with some answers to these weighty problems.

—DANIEL A. GLOMSET, M.D.

The Ileum

The ileum is an interesting segment of bowel. It is subject to all kinds of afflictions, beginning with tuberculosis and typhoid fever, and ending with the mysterious Crohn's disease. It is the home of a Meckel's diverticulum, and the area of obstruction in meconium ileus. It is the "water wringer" of the intestine, and the site of origin—the intussusceptum—in most cases of intussusception. It can be studied, scrutinized, and criticized at will, but it cannot be regarded lightly or excised without peril.

This latter consideration is of more than academic interest to the unsuspecting surgeon who, operating with dash and confidence for appendicitis, comes upon regional ileitis. His dilemma—for he suddenly has one—results from two established facts: regional ileitis often involves the terminal 25-30 cm. of the ileum, and resection of 30 cm. or more of terminal ileum frequently or usually results in sustained diarrhea. What should this surgeon do? Or better yet, what should he not do?

There are no exact or generally accepted answers to these questions. Some say take it out; others say leave it in. Some say sidetrack; others, exclude. Our surgeon wishes that he were somewhere else at the time, but obviously he can't be. He will end up, of course, following his own judgment in the matter, as those who practice medicine must frequently do. But whatever he does or does not do, he will be wise to reserve comment on his result. He will hear again from this patient, for, as stated above, the ileum is an interesting segment of bowel that cannot be regarded lightly or excised without peril.

—DANIEL F. CROWLEY, JR., M.D.

¹ Kraft, S. C., Bregman, E., and Kirsner, J. B.: Criteria for evaluating autoimmune phenomena in ulcerative colitis. *GASTROENTEROL.*, 43:330-336, (Sept.) 1962.

A Change in Name

A recent letter on the family doctor's function by Dr. H. Price, in the *BRITISH MEDICAL JOURNAL*,* contains a recommendation of considerable merit. The London physician says, "Let us begin by discarding at once the term *general practitioner* and to use at every opportunity the term *family doctor*; let the family doctor himself erase the words 'physician and surgeon' from his name-plate and merely say 'family doctor.' By the general use of this phrase a proper picture of this kind of doctor presents itself; here is an individual who should be earning his living by the study of the healthy and the ill individual in society; let us accept at once that this is a lifelong study, no less and no more important, say, than the lifelong study of congenital morbus cordis by a paediatrician with special interest in cardiology.

"The word *family* conveys the crux of the matter, for it is this basic sociological unit which is the province of this kind of doctor. He studies the family as a dynamic thing: its illnesses, its health, tribulations, and joys."

The term *general practitioner* is an ambiguous one with no specific connotation, in contrast to *family doctor*, which conveys accurately the role of the physician who does not restrict his practice to a limited field of medicine.

The British physician concludes his letter, "He should attach profound importance to the family unit, and by publicizing this fact he will without doubt convey to society his message, that he considers the well-being of the nation is centered in the family unit, that his function is to endeavor to maintain that well-being, with the help of social services, the hospitals, the public health services, and his medical specialist colleagues. The time has come to end once and for all the cold war between the three branches of the health service and for all to work towards the welfare of the patient, and the sooner we all realize this, the happier will we and our patients be."

Fortunately there is no cold war in this country among the various branches of the health services. There is a place for the public health services, for the academicians, for the family physicians and for the specialists. They complement one another in their services to the public. Unfortunately, there are a few physicians who entertain a special animus for the specialist, regardless of his field of endeavor, an animus seemingly prompted by bias rather than by reason. It is even within the realm of possibility that certain academicians and specialists show a certain disdain for the "bread and butter" physician. Specialization casts no mantle of superiority on anyone. Within the profession, recognition must be earned. There are no more respected or admired men than the family phy-

sicians who have dedicated their lives to the welfare of their patients. Whether generalist or specialist, a doctor commands respect and confidence and engenders admiration and affection if he possesses character, integrity, skill, compassion and conscientiousness.

The Virtues of Procrastination

Lawson Wilkins* has pointed out that about 400 new drugs are introduced each year, but that usually no more than 40 are new chemical entities, and that of those only three to six constitute real therapeutic advances. He emphasizes that many of the new remedies have subtle and obscure side effects which can produce bizarre iatrogenic disturbances which may be overlooked or misdiagnosed, and may lead to dangerous mistreatment of the patient. A drug may be on the market for a considerable time before the side effects are recognized and publicized to the practicing physician.

Wilkins is of the opinion that the medical profession itself is to blame for many therapeutic abuses, and could correct the situation by various means. The Johns Hopkins physician urges more rigid censorship of drug advertisements, improved facilities for the testing of drugs, better means of disseminating information concerning new drugs, with complete information on toxic effects, and closer scrutiny by medical journal editors of clinical reports submitted for publication.

In concluding his presidential address to the American Pediatric Society, Wilkins enumerated the following guide lines for the young doctor, and indeed these admonitions should be heeded by all physicians when they undertake the use of new drugs:

1. Remember the Oath of Hippocrates, which says, "I will use my power to help the sick to the best of my ability and judgment; I will abstain from harming or wronging any man by it. I will not give a fatal draught to anyone."

2. Give no drug if it is not needed. Placebos rarely have a place in pediatrics.

3. Remember that practically every effective and worthwhile drug has potentials for toxic or undesirable side-effects. Weigh carefully the advantages against the possible risks. In a potentially fatal infection, the risk of an antibiotic may be negligible; in a mild coryza, it is not. The pros and cons of cortisone and other hormones need careful, balanced judgment in each case.

4. Neither discuss nor prescribe drugs by brand name, and never use a drug or mixture without full knowledge of its chemical nature and pharmacologic action.

5. Do not attempt to learn your new therapeutics

* Price, H.: Family doctor's function. *BRITISH M. J.*, 2:1359, (Nov. 24) 1962.

* Wilkins, L.: Modern materia medica; presidential address, American Pediatric Society, May 10, 1962. *AM. J. DIS. CHILD.*, 104:449-456, (Nov.) 1962.

from trade brochures. Keep **USEFUL DRUGS** and **NEW AND NONOFFICIAL DRUGS** on your desk.

6. Do not hasten to use the 400 new drugs coming on the market each year—particularly if they are variants of standard drugs with which you have already had experience. Wait, wait, wait—and then wait! Let the other fellow poison his patient—or learn that the drug is worthless.

7. Finally, to paraphrase the advice that Polonius gave to his son, Laertes:

Those *drugs* thou hast, and their adoption tried
Grapple them to thy soul with hoops of steel;
But do not dull thy palm with entertainment
Of each new-hatch'd, unfledged *remedy*.

Caudal Anesthesia in Obstetrics

An extensive experience with caudal anesthesia in obstetrics in the Department of Obstetrics and Gynecology at the University of Michigan has led to the conclusion that the caudal method is safe, simple and superior to other technics used in childbirth. The difficulties and hazards, in the opinion of staff members there, have been overemphasized.

Evans and colleagues* have reported in detail on the use of caudal anesthesia in obstetrical patients during the years 1943 to 1957. During that period, its use increased from 2.55 per cent of deliveries in 1943 to 70.5 per cent in 1955, and over the length of time covered by the study, 9,822 or 59.85 per cent of 16,471 deliveries were accomplished under caudal anesthesia. An additional 793 patients, or 4.83 per cent, were delivered under various combinations including caudal anesthesia. Thus, a total of 10,615 parturients were delivered of a total of 10,729 infants. During the four years following the study period, there were 6,019 deliveries, and the frequency of caudal anesthesia continued high, varying from 67.5 to 79.2 per cent of cases. These figures attest to the adaptability and popularity of this form of anesthesia at the University of Michigan's Department of Obstetrics.

The technic described by Lull and Hingson, and by Hingson and Edwards was employed. In a few instances, the single injection method was used or the catheter technic was employed. Induction of anesthesia was usually delayed until progressive labor had been established, and until the cervix was dilated at least 4 cm. in primiparas, and 3 cm. in multiparas, until the fetal head was engaged, and until the uterine contractions were increasing in duration and intensity, with intervals less than five minutes.

As experience with caudal anesthesia increased, the contraindications to the use of the method diminished. The cooperation of the patient was essential. Prenatal counseling was found to dispell

the fear of labor and of being conscious during delivery. It was not used in neurologic disorders such as poliomyelitis and multiple sclerosis, or in patients with a phobia of postanesthetic paralysis. Pilonidal or adjacent skin infections were an absolute contraindication.

The duration of effective anesthesia varied. Larger doses of Metycaine were required for tall patients. The initial dosage usually provided anesthesia for one hour. Thereafter, doses as often as every 30 minutes were sometimes required. No supplemental analgesia was required in 5,942 patients. Of 3,264 patients receiving meperidine, 1,829 required 75 mg. or less, and 1 435 were given 75 to 100 mg. Morphine sulphate was given to only 106 patients. During the prodromal stage of labor, or before induction of anesthesia, 1,107 received a barbiturate. Morphine sulphate and a barbiturate were given to 106 patients for rest after the induction of caudal anesthesia. Scopalamine was not given with continuous caudal anesthesia, since patient cooperation is essential.

According to the authors' experience, there was a decline in the incidence of long labor with the increased use of conduction anesthesia. However a definite causal relationship could not be established. The relaxation of the pelvic musculature with the maintenance of uterine contractions may augment the progress of labor, but it may have a delaying action in some cases. Delivery occurred within two hours after induction in 5,530 patients, or 52.1 per cent, and 8,600 patients, or 81.2 per cent, were delivered within four hours. In only 429 patients (4.05 per cent) did delivery occur more than eight hours after the first dose of anesthetic.

At the time anesthesia was induced, 8,031 patients, or 75.66 per cent, had occipital presentations. Occipitoposterior positions were present in 1,170 patients, or 11.02 per cent. Of these, 646 rotated spontaneously, and 524 were rotated by the physicians. It was thought that anesthetic elimination of the reflexive expulsive powers contributed to the number of persistent occipitoposterior positions. However, the relaxation of the pelvic musculature produced by caudal anesthesia resulted in ideal conditions for manual or forceps rotation. Breech presentation occurred in 358 cases (3.37 per cent), and from their experience the staff at the University of Michigan prefer a general anesthetic when breech extraction is necessary.

Among the patients with cephalic presentations, delivery was spontaneous in 2,815 patients (26.52 per cent). Delivery by outlet or low forceps was accomplished in 7,120 patients (67.08 per cent). Mid-forceps were used in 115 deliveries (1.08 per cent). There were no high-forceps deliveries. Breech presentations occurred in 402 patients. Fifty-six patients delivered spontaneously, 266 were assisted, and 80 breech extractions were performed. There were 112 twin pregnancies, and

* Evans, T. N., Mosley, G. W., and Holder, L.: Caudal anesthesia in obstetrics. *OBST. & GYNECOL.*, 20:726-733, (December) 1962.

seven patients were delivered of twins by version and extraction. One classical cesarean section and 14 low-segment cesarean sections were done under caudal anesthesia, but spinal anesthesia was considered preferable for this operation.

The incidence of anesthetic failure proved to be very difficult to assess. As experience with the method increased, there was increased success with anesthesia. It was found that even physicians who are experienced in the use of this technic must avoid taking short cuts. A test dose must always be given, and strict adherence to technic is essential. There were toxic manifestations in 23 patients (0.21 per cent).

Close observation of the blood pressure in conduction anesthesia given during pregnancy is of paramount importance. Because of the increased splanchnic and pelvic visceral circulation during pregnancy, sympathetic block may result in vasodilatation and hypotension. Among the patients given caudal anesthesia, the incidence of a significant drop in blood pressure was high. In 1,238 patients, or 11.66 per cent, there was a drop in systolic blood pressure of 35 mm. Hg or more. In five patients in whom the blood pressure became imperceptible, there were no apparent deleterious effects on either fetus or mother. In patients already hypotensive, caudal anesthesia was regarded as contraindicated. Vasopressor agents were not administered until the systolic pressure approached or fell below 90 mm. Hg. Putting the patient in the Trendelenburg position, elevating her legs or turning her onto her side were helpful in the correction of hypotension.

In the group of over 10,000 women given caudal anesthesia for delivery, there was but one maternal death, and it occurred 13 days after delivery. Death resulted from the complications of diabetes, and was in no way related to the anesthetic. Maternal morbidity (i.e., a temperature of 100.4°F or more on two or more successive days postpartum) occurred in 135 patients, or 1.27 per cent. In none of these cases could the fever be attributed to caudal anesthesia. In contrast, the incidence of morbidity in patients given a general anesthetic was 4.52 per cent. A blood loss of 500 cc. or more occurred in 202 patients (1.9 per cent), and episiotomy was the chief site of blood loss. In patients given a general anesthetic, 4.6 per cent lost a pint or more of blood.

There were 131 intrapartum fetal deaths (0.79 per cent) during the 15-year study, in contrast to 71 (1.22 per cent) in patients not delivered under caudal anesthesia. After the induction of caudal anesthesia, there were only 53 intrapartum deaths (0.49 per cent). The total number of neonatal deaths was 413 (2.51 per cent), with 112 (1.04 per cent) in the caudal group. The majority of neonatal deaths were due to prematurity and congenital abnormalities. Resuscitation of the infant was required in 300 cases (2.82 per cent) after caudal

anesthesia; 172 (12.97 per cent) required resuscitation after general anesthesia.

The Michigan group are of the opinion that caudal anesthesia has many of the characteristics of an ideal obstetric anesthetic. In their hands, it is adaptable to the majority of patients; optimal levels of anesthesia are easily obtainable; the patient remains conscious and may cooperate during labor; and by strict adherence to precautions, maternal and fetal morbidity and mortality are not increased. They feel that the method has distinct advantages over other regional methods. The level and duration of anesthesia are more easily controlled; less preanesthetic analgesia is required; post-anesthetic headaches are less common; and haste in the administration of terminal anesthesia is avoided.

Certain deficiencies also have become apparent to the Michigan physicians, as their experience with the method has increased. The method is not applicable to all patients; the level and efficacy of anesthesia are not completely predictable; it may be less effective in subsequent labors; in rapidly progressing labor, the onset of anesthesia may be too slow; significant levels of hypotension may occur; and the patient under caudal anesthetic may require more attention than do other obstetrical patients.

The authors conclude that by observing proper precautions, other physicians will find continuous caudal anesthesia among the safest forms for obstetrical patients, with many advantages for mother and fetus over more commonly used methods.



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President's Page

The 1963 General Assembly of Iowa is now in session, and each physician in the state should take every opportunity to present his views on important issues to the legislators from his area and to any of the others whom he happens to know. For those who are in need of such information, this issue of the JOURNAL contains a list of counties and of the legislators who represent them. In addition, there is a map showing the new congressional districts, and an accompanying tabulation contains the names of our representatives and senators in Congress.

The "green sheet" in this month's JOURNAL presents the IMS recommendations to Iowa legislators regarding the implementation of Kerr-Mills (Medical Aid for the Aging). I hope that every member will read it and will call the attention of his legislators to it.

A handwritten signature in cursive script, reading "George H. Scanlon". The signature is written in dark ink and is positioned above the title "President".

President

THE JOURNAL *Book Shelf*



BOOK REVIEWS

RESEARCH APPROACHES TO PSYCHIATRIC PROBLEMS: A SYMPOSIUM, ed by Thomas T. Turlentes, M.D., Seymour L. Pollack, M.D., and Harold E. Himwich, M.D. (New York, Grune & Stratton, Inc., 1962. \$5.50).

This volume is a record of the symposium held at the Galesburg State Research Hospital, October 21 and 22, 1960, in celebration of the tenth anniversary of the establishment of that institution. It is an attempt to summarize some of the principal ideas and promising trends that appeared during that decade. The material includes 12 articles on a wide variety of aspects of mental illness, and as a result there is no consistent theme. Such a volume is particularly valuable to those who attended the meetings, but for others it resembles a scientific periodical, rather than serves as a ready reference.

In "Development of Concepts of Organization and Function of the Brain," H. W. Morgan describes a variety of theories regarding brain function, starting with the Platonic soul, touching upon the phrenologic and various other notions and concluding with the cybernetic model employing the servomechanism of N. Wiener *et al.* The author reviews Renshaw's studies of the Golgi type II interneuron as a mechanism for converting positive to negative feedback, and refers to the discovery of a gamma-efferent innervation of the intrafusal fibers within the muscle spindle as modalities of feedback. However, in spite of this supporting factual evidence, the import is that we are far from a consensus as to how the nervous system actually functions.

The other articles cover the usual subjects in such a synopsis: sympathomimetic amines, genetics, biochemical identification of schizophrenia, sensory deprivation, somatic reactions and Harlow's studies of monkeys. The reviewer was irritated, as usual, by the use of such words as *prolegomena* by people who have nothing new to say, and was slightly amused at the suggestion that since animals react to dummy mothers, perhaps a patient on an analyst's couch could make a transference to an automaton capable of uttering an eloquent recorded "Hmmm" after every third one of the patient's sentences, or could interject an occasional erudite "What do you think?"

If one is in a quizzical mood, however, and recalls the love men have for ships and machines, perhaps this idea of transference to automata may not seem so preposterous after all. In the wide context of Magoun's article is the premise that the mind is contiguous with the mechanical, despite the lofty ancient talk about its involvement with the soul. In a more pervasive way,

one senses an extension of this contiguity with the physical and chemical aspects of life in the article by H. E. Lehmann *et al.*, "The Effects of Psychotropic Drugs on Biological Systems of Low Complexity," which deals with dandelions and other primitive forms.

In general, the symposium supports the contention that mental illness is the result of defects that were antecedent of social and psychological influences. Thus, Lauretta Bender is quoted as saying that it is possible to recognize schizophrenia even in infants because of the undue persistence of primitive reflexes. This can be taken to indicate that the substrate of later proprioceptive failure is already present soon after birth.

Thus, it would seem that if there is a theme of this symposium it is that mental illness is some sort of failure in the mind's mechanical relation to its environment. In this, there is no presumption that the mind is located in the brain, even though the two may be intimately connected.—Edwin O. Niver, M.D., Director of Research and Education, Clarinda Mental Health Institute.

THE HOUSE PHYSICIAN'S HANDBOOK, by C. Allan Birch, M.D. (Edinburgh & London, E. & S. Livingstone, Ltd., and Baltimore, The Williams & Wilkins Company, 1962. \$4.50).

This is a manual for house physicians in British hospitals. It deals with hospital organization in the British Isles, and with procedures and tests as they are performed there, as well as certain information on drugs usually used and/or stocked in British hospitals. It is clearly the product of a highly organized and regimented hospital system. As such, it would have no usefulness for a house officer in an American hospital, where individuality is the rule rather than the exception. Thirty per cent of the text deals with British systems entirely. The remainder of the book covers information with international application, but the coverage is remarkably superficial. Several specific points made in the text can be challenged. For example, the statement that the bleeding time need not be requested unless the platelet count is low overlooks one group of the purpuras. The method for correcting hyponatremia is correct to a point, but again appears to exclude the patients who may require hypertonic saline infusions for correction. More points could be mentioned, and these are but examples.

This text would be useless for American medical graduates, even as a quick reference source on the wards. Its price, \$4.50, could be better spent on a good monograph along the lines of the medical interests of the young house officer.—Robert E. Carter, M.D.

SYNOPSIS OF ROENTGEN SIGNS, by *Isadore Meschan, M.D.*, with the assistance of *R. M. F. Farrer-Meschan, M.D.* (Philadelphia, W. B. Saunders Company, 1962. \$11.00).

This volume is a condensation of material from two other well known books, *ROENTGEN SIGNS IN CLINICAL DIAGNOSIS* and *NORMAL RADIOGRAPHIC ANATOMY*. Consequently there is nothing new in it for physicians who are familiar with those two earlier works. That number includes most radiologists.

As its title implies, this book is a synopsis. It has all of the advantages and disadvantages of that type of presentation. It is relatively short (417 pages), and for a book of its size, it contains a large amount of useful information, much of it in outline or "midget exhibit" style. Thus, it is valuable for medical students, beginning residents or physicians outside the field of radiology who desire more than just a superficial knowledge of roentgenology. For the radiologist or advanced resident, however, the more detailed works mentioned previously are of more value.

Any book of this size that attempts to cover such a broad subject must of necessity omit a great deal, and this volume is no exception, although the author has done a fine job. Also, in attempting to cover the entire field, he has attempted to discuss many of the rarer conditions that are not of general interest. This comment is especially applicable to the chapters on bone diseases.

Each chapter is augmented by a list of questions which the student should find helpful, and I recommend the sections on chest diseases to all physicians. —*Morris G. Sloan, M.D.*

CONGENITAL CARDIAC DISEASE: A REVIEW OF 357 CASES STUDIED PATHOLOGICALLY, by *Robert S. Fontana, M.D.*, and *Jesse E. Edwards, M.D.* (Philadelphia, W. B. Saunders Company, 1962. \$10.00).

This book is a complete survey of the literature pertaining to certain aspects of congenital heart disease. Incidence, association with other conditions, sex and age at death are included. Clinical symptoms, description of lesions, and physiological results of the anomaly are not discussed.

The book is an excellent reference for teaching, research or writing, but has rather little value for the physician in private practice. —*John E. Gustafson, M.D.*

BOOKS RECEIVED

TRANSPLANTATION, A CIBA FOUNDATION SYMPOSIUM, ed. by *G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P.*, and *Margaret P. Cameron, M.A.* (Boston, Little, Brown and Company, 1962. \$12.00).

RESISTANCE OF BACTERIA TO THE PENICILLINS, CIBA FOUNDATION STUDY GROUP NO. 13, ed. by *A. V. S. de Reuck, M.Sc.*, and *Margaret P. Cameron, M.A.* (Boston, Little, Brown and Company, 1962. \$2.95).

DRUGS IN CURRENT USE, 1963, ed. by *Walter Modell, M.D.* (New York, Springer Publishing Company, Inc., 1962. \$2.50).

Plan for Eliminating Double Health Insurance Coverage

A special study group set up jointly by the American Life Convention, the Health Insurance Association of America and the Life Insurance Association of America is proposing a novel scheme for eliminating losses that have resulted from duplication in health insurance coverage. It would allow overinsurance against one category of medical or hospital bills to be applied only toward correcting underinsurance in another category. The new provision, the group contends, is a liberal one for the claimant, and it is expected to be acceptable both to employee groups and to state insurance commissioners.

Under the proposed arrangement, the claimant would be reimbursed up to 100 per cent of his insured expenses. The commonest form of overinsurance in the group field occurs when a working wife is covered in her own right as an employee, but also is covered through her husband at his place of employment. In such a case, if the woman had hospital room-and-board coverage of \$15 per day under each policy, she might enter a hospital charging \$20 per day for a semi-private room and pocket \$10 per day after paying her bill, as things now stand. Under the new scheme, she would collect only \$20 per day for hospital room-and-board, and the extra \$10 would be applied against any other expense of her illness, such as a surgeon's bill, to the extent that the other charge was incompletely covered by insurance.

Under no circumstances would the holder of duplicate coverage have an opportunity to profit from an illness, and the resultant savings to the carriers would be passed on to insured groups through reductions in premiums.

The report has been sent to all member companies of the three associations, and to each state insurance commissioner.

W. B. SAUNDERS COMPANY features the following recent books in their full page advertisement appearing elsewhere in this issue:

1963 CURRENT THERAPY

Today's best treatments—ranging from management of conditions causing enuresis to treatment of coma with analeptic drugs.

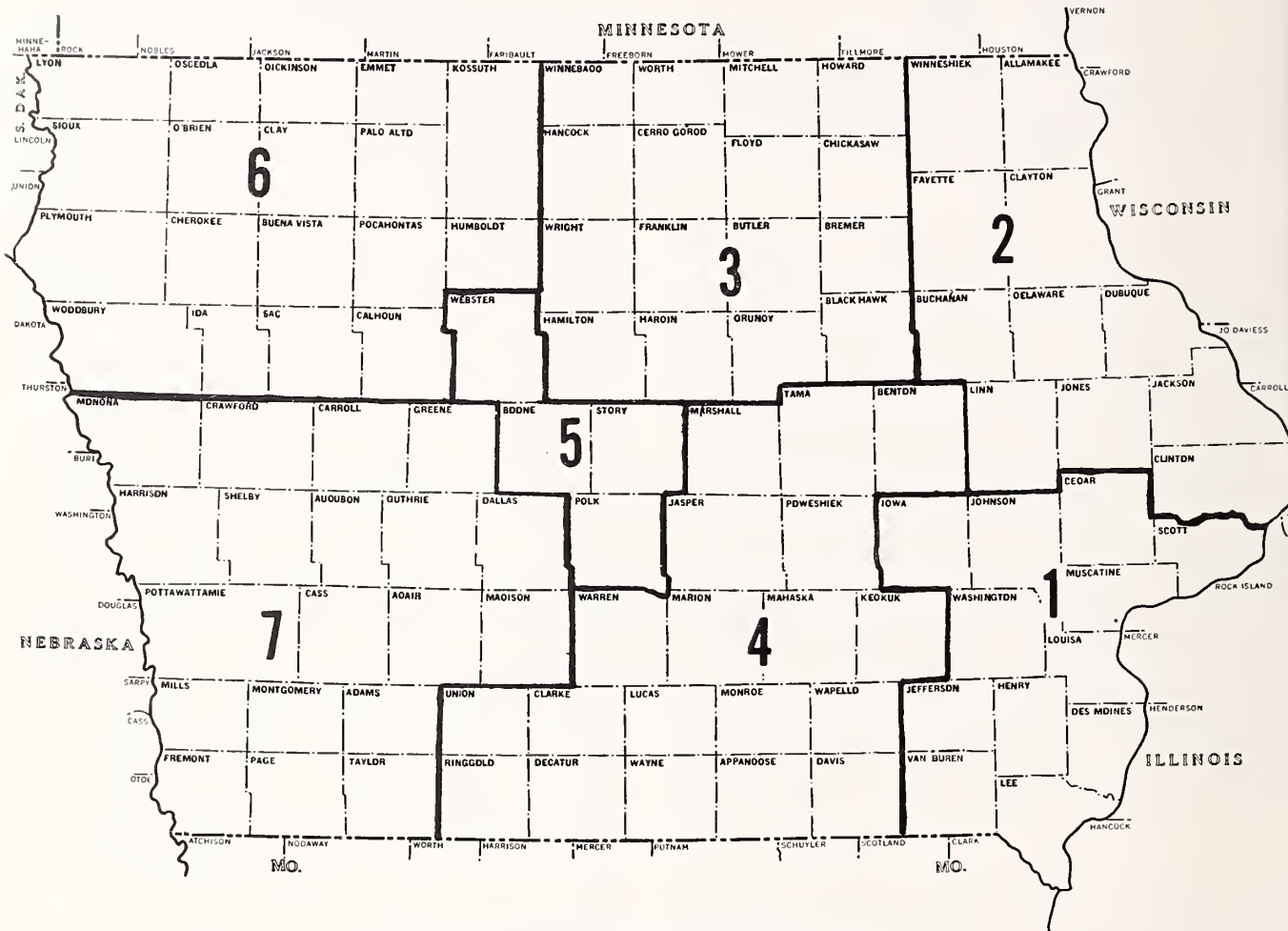
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Letters to congressmen should be addressed to the House Office Building, Washington 25, D. C., and letters to senators should be addressed to the Senate Office Building, Washington 25, D. C.

1963 IOWA LEGISLATURE

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Buena Vista	Donald G. Beneke (R) Laurens	Chas. E. Grassley (R) New Hartford	Marion	Vera Shivers, Mrs. (R) Knoxville	Alvin P. Meyer (D) Winterset
Butler	Vernon Kyhl (R) Parkersburg	Wm. P. Winkelman (R) Lohrville	Marshall	Howard C. Buck (R) Melbourne	Dan M. Prine (R) Oskaloosa
Calhoun	Donald G. Beneke (R) Laurens	Bernard J. Murphy (D) Carroll	Mills	Verne Lisie (R) Clarinda	Elmer H. Vermeer (R) Pella
Carroll	Peter F. Hansen (D) Manning	Lester L. Kluever (R) Atlantic	Mitchell	Charles F. Griffin (R) Mapleton	John L. Mowry (R) Marshalltown
Cass	John D. Shoeman (R) Atlantic	A. L. Mensing (R) Lowden	Monona	Howard Vincent (R) Russell	Wm. J. Scherle (R) Henderson
Cedar	Earl Elijah (R) Clarence	Marion E. Olson (R) Mason City	Monroe	Leo Elthon (R) Fertile	Fred B. Hanson (R) Osage
Cerro Gordo	Leigh R. Curran (R) Mason City	Washington W. Steele (R) Cherokee	Montgomery	Edward A. Wearin (D) Lenox	Elroy Maule (D) Onawa
Cherokee	J. Henry Lucken (R) Akron	Vince Steffen (D) New Hampton	Muscatine	Earl Elijah (R) Clarence	Katherine Mull Falvey (D) Albia
Chickasaw	Robert R. Rigler (R) New Hampton	Cecil V. Lutz (R) Osceola	O'Brien	LeRoy Getting (R) Sanborn	Conrad Ossian (R) Red Oak
Clarke	Joseph B. Flatt (R) Winterset	Merle W. Hagedorn (D) Royal	Osceola	LeRoy Getting (R) Sanborn	David Stanley (R) Muscatine
Clay	John J. Brown (D) Emmetsburg	Harley J. Palas (D) Farmersburg	Page	Verne Lisie (R) Clarinda	Marvin W. Smith (R) Paulina
Clayton	Adolph Elvers (D) Elkader	John Camp (R) Bryant	Palo Alto	John J. Brown (D) Emmetsburg	Howard N. Sokol (R) Sibley
Clinton	David O. Shafr (R) Clinton	Lawrence D. Carstensen (R) Clinton	Plymouth	J. Henry Lucken (R) Akron	Leroy S. Miller (R) Shenandoah
		Everett Crane (R) Vail	Pocahontas	Donald G. Beneke (R) Laurens	John P. Kibbie (D) Emmetsburg
Crawford	Peter F. Hansen (D) Manning	Dewey E. Goode (R) Bloomfield	Polk	G. E. O'Malley (D) Des Moines	A. Gordon Stokes (R) LeMars
Dallas	H. L. Cowden (R) Guthrie Center	Lorne R. Worthington (D) Lamoni	Pottawattamie	R. C. Turner (R) Council Bluffs	Frances G. Hakes, Mrs. (R) Laurens
Davis	Dewey B. Phelps (R) Hillsboro	James E. Patton (R) Manchester	Poweshiek	Kenneth Benda (R) Hartwick	H. C. Reppert, Jr. (D) Des Moines
Decatur	Joe N. Wilson (R) Unionville	Chas. P. Miller (D) Burlington	Ringgold	Franklin S. Main (D) Lamoni	Wm. F. Dennon (D) Des Moines
Delaware	Irving D. Long (R) Manchester	Roy J. Smith (R) Spirit Lake	Sac	Peter F. Hansen (D) Manning	Maurice Van Nostrand (R) Avoca
Des Moines	Robert R. Dodds (D) Danville	Alfred P. Breitbach, Sr. (D) Farley	Scott	Jack Schroeder (R) Bettendorf	Harry R. Gittins (R) Council Bluffs
Dickinson	LeRoy Getting (R) Sanborn	John L. Duffy (D) Dubuque	Shelby	John D. Shoeman (R) Atlantic	George L. Paul (R) Brooklyn
Dubuque	Andrew G. Frommelt (D) Dubuque	Niels J. Nielsen (D) Ringsted	Sioux	J. T. Dykhouse (R) Rock Rapids	Quentin V. Anderson (D) Beaconsfield
		Maurice E. Baringer (R) Oelwein	Story	A. V. Doran (R) Boone	Elmer F. Lange (R) Sac City
Emmet	John J. Brown (D) Emmetsburg	Wayne Shaw (R) Charles City	Tama	R. O. Burrows (R) Belle Plaine	Paul Knowles (R) Davenport
Fayette	George L. Scott (R) West Union	Floyd P. Edgington, Sr. (R) Sheffield	Taylor	Orval C. Walter (D) Lenox	Riley Dietz (R) Walcott
Floyd	Robert R. Rigler (R) New Hampton	Paul E. McElroy (R) Percival	Union	Edward A. Wearin (R) Red Oak	Alfred Nielsen (R) Defiance
Franklin	Vernon Kyhl (R) Parkersburg	C. R. Fisher (R) Grand Junction	Van Buren	Franklin S. Main (D) Lamoni	Elmer H. Den Herder (R) Sioux Center
Fremont	Verne Lisie (R) Clarinda	Harold O. Fischer (R) Wellsburg	Wapello	Joe N. Wilson (R) Unionville	Ray C. Cunningham (R) Ames
Greene	A. V. Doran (R) Boone	Robert W. Naden (R) Webster City	Warren	Dewey B. Phelps (R) Hillsboro	Charles F. Balloun (R) Toledo
Grundy	Vernon Kyhl (R) Parkersburg	Lenabelle Bock, Mrs. (R) Garner	Washington	Jake B. Mincks (D) Ottumwa	Ivan Wells (D) Bedford
Guthrie	H. L. Cowden (R) Guthrie Center	Wm. E. Darrington (R) Persia	Wayne	Vera Shivers, Mrs. (R) Knoxville	Joseph C. Knock (R) Creston
Hamilton	John A. Walker (R) Williams	Chas. F. Strothman (R) New London	Webster	Richard L. Stephens (R) Ainsworth	Floyd H. Millen (R) Farmington
Hancock	John A. Walker (R) Williams	M. Ross Stevenson (D) Lime Springs	Winnebago	Howard Vincent (R) Russell	Cleve L. Camahan (D) Ottumwa
Hardin	John A. Walker (R) Williams	Percie E. Van Alstine (R) Gilmore City	Winneshek	C. Joseph Coleman (D) Clare	Carl Hirsch (R) Indianola
Harrison	Charles F. Griffin (R) Mapleton	J. Wesley Graham (R) Ida Grove	Woodbury	George L. Scott (R) West Union	Keith L. Vetter (R) Washington
Henry	Clifford M. Vance (R) Mt. Pleasant	Howard Tabor (D) Baldwin		Chas. S. Van Eaton (R) Sioux City	Reed Casey (D) Corydon
Howard	Leo Elthon (R) Fertile	Max W. Kreager (R) Newton			John J. Murray (D) Fort Dodge
Humboldt	C. Joseph Coleman (D) Clare				Henry C. Nelson (R) Forest City
Ida	J. Henry Lucken (R) Akron				Hillman H. Serstand (R) Decorah
Iowa	Kenneth Benda (R) Hartwick				Leonard C. Andersen (R) Sioux City
Jackson	Earl Elijah (R) Clarence				Louis A. Peterson (R) Lawton
Jasper	Eugene Marshall Hill (D) Newton				Harold Mueller (D) Manly
					Raymond W. Hagie (R) Clarion

Hearing Conservation

Speech and Language Problems of The Hard-of-Hearing Child

The initial step in over-all rehabilitation for a child with a hearing loss is simple recognition of the problem. Far too many of these children who have undetected hearing losses are considered speech defectives, mental retardation cases or behavior problems. Thus there is a real urgency about early detection and diagnosis. (This has been discussed in a previous article in this series.)

Second, after recognizing that a child is hard-of-hearing, we need to give him a complete medical and audiologic evaluation to determine the degree and type of his loss. Such an examination should be followed by an evaluation for amplification, if indicated. Third, it is essential that such a child be evaluated by a psychologist, not only to determine his educational potential but also to find whatever effect his hearing loss may have had on his total adjustment. Finally, social service records, or at least the case history and family situation, should

The Committee on the Conservation of Hearing for the State of Iowa, which is presenting a series of articles in the *JOURNAL*, consults with and advises all agencies interested in the problems of hearing impairment. Its services are available to industry, agriculture, education and to the broad spectrum of public health and welfare services within the state.

The Committee has been officially sponsored by the Iowa State Department of Health since 1957. However it was first formed in 1949, and has been continuously active under the leadership of Dr. Dean M. Lierle, head of the Department of Otolaryngology and Maxillofacial Surgery at S.U.I. From the first, the Committee has been interdisciplinary in composition and purpose.

The Committee presently consists of: C. M. Kos, M.D. (chairman), otologist in private practice, Iowa City; Joseph Wolvek (executive secretary), consultant, Hearing Conservation Services, State Department of Public Instruction, Des Moines; M. G. Barillas, assistant director for Special Services Division of Vocational Rehabilitation, Des Moines, Iowa; L. E. Berg, superintendent, Iowa School for the Deaf, Council Bluffs; Dale S. Bingham, consultant, Speech Therapy Services, State Department of Public Instruction, Des Moines; Paul Chestnut, M.D., private practitioner and member of AAGP, Winterset; James F. Curtis, Ph.D., head, Department of Speech Pathology and Audiology, S.U.I., Iowa City; Madeline M. Donnelly, M.D., director, Division of Maternal and Child Health, State Department of Health, Des Moines; Joseph Giangreco, assistant superintendent, Iowa School for the Deaf, Council Bluffs; Malcolm Hast, Ph.D., Department of Speech Pathology and Audiology, S.U.I., Iowa City; Byron Merkel, M.D., otolaryngologist in private practice and member of Academy of Otolaryngology and Ophthalmology, Des Moines; William Prather, Ph.D., Department of Speech Pathology and Audiology, S.U.I., Iowa City; Mrs. Jeanne Smith, Department of Otolaryngology and Maxillofacial Surgery, S.U.I., Iowa City; Edmund Zimmerer, M.D., commissioner, State Department of Health, Des Moines.

be investigated in an attempt to determine the best possible programing for the particular child.

Initially, parents are usually quite upset and are most anxious that a child "learn to talk." Effort must be devoted, at this point, to helping the parents understand the necessity for their child's first learning to *understand* language, if his hearing loss is of sufficient degree so that he has not already learned to communicate verbally to some extent. By "language" we mean the total communication process—the ability to interpret the spoken word and to grasp the concept of thought transference from one human being to another. A word must have meaning for a child prior to his attempting a reproduction of it. Otherwise there is danger of his merely "parroting." By "parroting" we mean repeating verbal stimuli without comprehending the thought process that is involved.

Throughout the entire period of rehabilitation or habilitation for these children, their need for language and language growth must constantly be recognized. If corrective speech measures are allowed to take precedence, the need for continued language-building is frequently submerged, and the child may fall far behind his peers in general communication, in vocabulary and in language skills. For the very young child, corrective speech, as such, should be secondary to the total, over-all pattern of learning in the language area. The correction of articulation can be initiated after a firm foundation for communication has been established. Primary skills will of necessity take precedence as one initiates a total program for a child who must use amplification and/or speech reading.

Speech and language for the normal child starts in infancy with recognition of voices and patterns which are meaningful to him. His initial attempts at speech are based on the many repetitions he has heard of given sounds and words. According to Irwin, any word a child uses spontaneously is one that has been used approximately 60 times in his presence. This fact gives us at least a meager idea of the great deficit that a hard-of-hearing child has to overcome. It is imperative that the parents be counseled, at the very outset, to do a great deal of verbalizing with a hard-of-hearing child, regardless

of whether he recognizes words initially. A hearing-handicapped child must be made aware of language and of facial movements, in order to learn to communicate visually as much as possible. For a child with imperfect hearing, such visual communication may provide a basis for the necessary initial communication skills.

It is hopeful to note that greater emphasis will be placed, in the not too distant future, on the early detection of these children prior to school age. The normal child establishes language skills between the ages of two and five. At the first-grade level, the average child has developed a vocabulary of approximately 5,000 to 6,000 words. This in itself points out the obvious need to recognize hard-of-hearing children and to institute remedial measures prior to their entrance into school.

If the child is communicating, albeit imperfectly, by the time he reaches school age, it is hopefully assumed that detection and evaluation of the hearing loss will be part of the school program, since there are regular audiologic checkups in the Iowa public schools nowadays. Assuming the hearing deficit has been detected, a speech clinician and/or hearing clinician can be made available for the individual child's needs. However, such a specialist is not always available, and it is then imperative that a hearing-handicapped child be referred to a recognized center* specifically designed to meet his requirements for speech and hearing. For too many of these children, rehabilitative measures are not instituted because of a lack of facilities within the home community.

Children with marked hearing losses are not difficult to recognize. They are usually noted at a comparatively early age by their parents, by medical personnel and by other observers. A few of these children are still neglected because of the lack of popular recognition of remedial sources. The vast number of children with mild and moderate hearing losses are the ones who frequently remain undetected over a period of years, particularly the children who have been intelligent enough to compensate in part by lip reading and using other visual signs. These children will almost invariably have defective articulation. In the school situation at least, it is to be hoped that a teacher will note the speech defect and refer the child to the speech clinician. Such a child consistently

omits or distorts sounds like "th," "s," "t," "f," and "k," and omits the consonant sounds at the ends of words.

Speech or language, as such, should never be an isolated, rehabilitative measure for a child with a hearing deficit. This rehabilitation must be no more than a part of an over-all adjustment program, including speech-reading, amplification, auditory training, psychological counseling, sometimes remedial reading, and classroom adjustment. Except as a part of a larger pattern, simple speech therapy will be of no more than minimal assistance.

Mayo Clinical Reviews

The Mayo Clinic and Mayo Foundation are to present Clinical Reviews twice, next spring, on March 11-13 and again on March 18-20. The programs are to be identical. Last year, over 800 physicians attended.

Topics to be covered on the first day include acute asthma, heart failure in the aged, diagnosis of headache, subarachnoid hemorrhage, heart murmurs in children, selection of patients for heart-valve surgery, dizziness, common disorders of the external eye, new antibiotics, facial pain, moles and melanoma, hearing deficiencies, leg ulcers, pitfalls in vein surgery, lymphedema, pelvic malignancy, conservative treatment of fractures, and pneumonia and its complications.

Presentations on the second day will concern oral contraceptives, abnormal presentations in obstetrics, mouthguards for athletes, agricultural hazards, hematologic clues to malignant disease, hemolytic anemia, blood dyscrasias, the dilemma of pain in the neck, radioactive scanning methods, rheumatoid variants, anorectal surgery, angiography in clinical diagnosis, psychological aspects of aging, abnormal cervical cytology, office urology, medical management of hypertension, and respiratory distress in the infant.

Subjects for the final day will be ulcers of the anus and rectum, hypercortisonism, vascular clues in diagnosis, radiologic treatment of cancer, diagnostic problems in the head and neck, radiologic diagnosis of gallbladder problems, traumatic intracranial bleeding, smoking and lung cancer, insulin therapy, acute cholecystitis, liver biopsy, intractable peptic ulcer, massive gastrointestinal bleeding, and management of the acutely disturbed patient.

This three-day program is acceptable for 25 hours of Category I credit by the American Academy of General Practice.

The registration fee is \$10. The number of physicians who can be accommodated is necessarily limited, and for this reason identical sessions are being offered during successive weeks. Those wishing to attend should communicate with Mr. M. G. Brataas, Mayo Clinic, Rochester, Minnesota, and should indicate which session they prefer.

IMS ANNUAL MEETING

Fort Des Moines Hotel

April 7-10, 1963

* For a listing of centers in Iowa, address: Hearing consultant, Department of Public Instruction, State Office Building, Des Moines 19.

THE DOCTOR'S BUSINESS

Life Insurance Dividends

HOWARD D. BAKER

Waterloo



The choice of dividend treatment frequently poses an important problem in the organization of an insurance portfolio. With regard to the disposition of dividends, there are four basic options, any one of which may be exercised in most participating life insurance contracts.

THE CASH OPTION

The cash option provides that annual dividends will be paid to the policyholder in cash. In general, this arrangement has little utility for the average doctor who is building up his insurance program. It is of value only to the man who has paid-up, participating policies, and who has no need for additional insurance and is no longer paying premiums against which the dividends could be offset.

THE PREMIUM OPTION

The premium option provides that dividends will be used annually in partial satisfaction of premiums due. It is most useful for the young doctor who is building up a large insurance program and wants MAXIMUM protection. He obviously can carry much more insurance if he pays only the net premium (premium less dividend), rather than uses his dividends otherwise. If such a man later improves his financial position or becomes uninsurable, he can change his election to the paid-up insurance option.

THE PAID-UP INSURANCE OPTION

Annual dividends can be applied to the purchase of paid-up additions to a life insurance policy. This choice is generally most useful to a doctor who is between 40 and 50 years of age and does not have

as much insurance as he ought to have or would like. It is quite valuable, also, to the doctor who has become uninsurable. In either of these situations, a man can elect to use his dividends to purchase paid-up additions which will increase his protection and will also maintain a cash value about equal to, or slightly greater than, the dividends originally invested. Thus, the policyholder gains the advantage of maximum protection, but still retains a cash reserve for retirement or emergency use.

THE INTEREST OPTION

Dividends can be left on deposit with the company to accumulate at interest. This option is generally outmoded because of the low rate of return (2-2½ per cent), and because, with most low net-cost companies, paid-up additions will have a cash value which will equal or exceed the accumulation of dividends left at interest over a period of years.

In general, this option would be worthy of consideration only on contracts under which the insured is at liberty to convert accumulated dividends and interest to paid-up insurance at any time. Such a privilege is quite rare in policies today.

What about the doctor who elected, years ago, to leave his dividends at interest, as many did? He now has a sizeable accumulation drawing two to three per cent *taxable* interest. His individual situation should be reviewed, and probably his dividend option should be changed. If he needs protection through additional insurance, he should take the paid-up insurance option on future dividends and, to whatever extent possible, on accumulated dividends. To the extent that paid-up additions in exchange for the accumulation are prohibited, it is our feeling that dividends should be withdrawn and prudently invested elsewhere, for greater income and possible growth. This advice is also applicable to situations where present insurance, reduced insurance needs and other assets make it unnecessary for the individual to consider adding to his insurance.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

In the Public Interest



Immediate Implementation Is Imperative, But the Iowa Kerr-Mills Program Should Be Kept Flexible

The platforms and the leaders of both political parties in Iowa have endorsed the Kerr-Mills Enabling Act,* and have asked that funds be appropriated for such a program. Thus there no longer is much doubt that some money for it will be forthcoming this year. The principal matters remaining to be decided are the size of the appropriation and the technic to be used in administering it.

Everyone wants adequate help to be given to all elderly citizens who are not now public charges but must have assistance if their health-care needs are to be met. But at the outset, the program should be designed principally to assess the size and needs of the group to be benefitted, and the administrative set-up should be one that can easily be changed.

Governor Hughes has suggested a state appropriation of \$2 million for each of the next two years, which at the current federal-state matching formula of approximately 3:2 would provide about \$5 million annually. The State Board of Social Welfare has proposed a state appropriation of \$4 million per year, which along with federal matching funds would make \$10 million available each year. More advisable figures, we think, can be found somewhere between those two sets, and we suggest a state appropriation of \$2.5 million per year, which with the federal share would provide about \$6.25 million for each of the next two years.

A FISCAL AGENT SHOULD BE USED AT THE START

The legislators have three alternatives from which to choose in setting up the administrative framework for Kerr-Mills, or Medical Aid for the Aged, and the choice is an extremely important one. They can, of course, elect to let the Department of Social Welfare handle the program more or less as it sees fit, chiefly because it already has

charge of all aspects of several "categorical assistance" programs. We oppose such a move for several reasons. First, it is essential that facts be gathered regarding the numbers and the needs of the marginally self-sufficient group of elderly people, as distinguished from those who already are receiving government help through the Old Age Assistance program, and regarding the future cost of supplementing their resources so that they can meet their needs fully. Such findings will be available only if the MAA and the OAA groups are kept entirely separately, and it is almost certain that the Department would fail to do that. Since OAA beneficiaries in nursing homes could be more amply provided for under MAA, it is likely that with both programs in their hands, the DSW personnel would make numerous transfers. In North Dakota, at the end of the first year, 64.7 per cent of persons on the MAA rolls had been transferred from OAA, from Aid to the Blind or from Aid for the Totally Disabled.

Second, the handling of MAA by the Department would probably be unnecessarily expensive because its operations are widely dispersed. Besides determining the eligibility of applicants, it would undertake to audit vendors' claims in each of its 99 county offices, and thus would find it necessary to hire a very considerable number of additional clerks. Besides, it would have to employ a full-time physician consultant at the state level, and to pay him a salary of approximately \$20 thousand per year.

Third—and this is most important—giving MAA entirely into the control of DSW would, in all practicality, be irrevocable, whereas an arrangement with a private fiscal agent could be tentative. In just the health-care aspects of the existing "categorical assistance" programs, the Department paid out in excess of \$5.3 million last year. If once it were given this pilot MAA program, and if it interwove it with the others, as seems quite

* House File 470, in the 1961 General Assembly, and now Chapter 249A of the 1962 Code of Iowa.

likely, any chance for a change would have been lost forever.

Administration of MAA, at least temporarily, through a private agency would insure the gathering of precise sets of figures. It would also eliminate the initial processing and review of medical, hospital, nursing home, dental and drug bills, etc. by county welfare workers, and would permit trained personnel in the office of the insurance company to do this work. Questionable claims would be reviewed by professionals in the health and accident insurance field, and would be forwarded when necessary to county or state committees of vendors for final adjudication, in accordance with policies and rules established by the DSW. In addition, the state comptroller would re-audit them.

The vendors who composed the state or county committees, and the insurance men, could be relied upon to guard the program's funds with the utmost care. To a man, they are devotees of private enterprise, and they would be intent upon proving the preferability of their management.

Independent fiscal management—which, by the way, is expressly permitted by the Kerr-Mills Enabling Act—is by no means an untried idea. The federal Defense Department has used it altogether satisfactorily throughout the country during the past several years, in its program that provides health care for the dependents of servicemen. Any of the insurance companies that might undertake to serve the State of Iowa as fiscal and administrative agent for MAA would be certain, furthermore, to interfere as little as possible in physician-patient relationships. There would be no requirement for prior authorizations for specific diagnostic or treatment procedures, and thus patients would be spared delays and invasions of privacy. Such management would necessitate minimal outlays for equipment and staff, since the chosen health and insurance underwriter would already have electronic computers, trained clerical personnel and salaried medical consultants ready to do the additional work. DSW probably could utilize no more than its present staff in establishing the eligibility of applicants and reviewing the status of participants in the program.

HEALTH INSURANCE MAY PROVIDE THE BEST FINAL ANSWER

It is quite possible that fiscal-agent administration will prove the best possible arrangement, when it has been given a two-year trial, and that the Legislature will want to continue it beyond the spring of 1965, but the major advantage of choosing it at this time is that an opportunity can thus be provided, two years hence, for considering the insurance approach to health care for the near-needy aged. As a protection for the dignity of the beneficiary and as a means of preserving the free-enterprise system, the very best arrangement would be one under which state and federal moneys might be used to pay a share of the premiums on a health-insurance policy for each

eligible individual or couple—a share that might be large or small, depending on the payment that the policyholder could meet out of his own pocket. Except for establishment of eligibility and occasional reviews involving only his financial status, the aid recipient would have to undergo no special scrutiny at any time. He would be indistinguishable from any other health-insurance policyholder, and his patient-physician relationship could remain confidential. If the legislators are interested in preserving the individuality and guarding the self-esteem of our less-fortunate senior citizen, this would seem the best way for them to do it!

For the time being, however, though health-insurance policies are available for the aged on an individual basis, maximally economical group coverages for the elderly unemployed haven't yet been devised. The information necessary for setting up actuarially sound arrangements of this sort—data on numbers of people to be covered and on their needs as regards medical and surgical treatment, dentistry, hospitalization and drug requirements—can be ascertained only through a year or more of operation of the Iowa MAA program.

CONCLUSION

In summary, the Iowa Medical Society recommends the following:

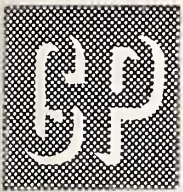
A. An appropriation of \$2.5 million per year for the first two years of the MAA program, which with federal matching funds will make \$6.25 million available each year. Such an amount will assure a good start and adequate fact-finding, but it is small enough to forestall waste.

B. Care should be taken to make sure that MAA is provided only to those elderly persons who are ineligible for previously existing categorical assistance programs. Unless the new group is kept distinct, no one will ever know the precise number of Iowa's near-needy aged, or whether the new program is satisfying their requirements.

C. For the first two years, an independent fiscal agent should be engaged to process and pay claims, under the supervision of the State Welfare Department and the state comptroller. This intermediary would help preserve the confidentiality of the physician-patient relationship, it is sure to prove at least as economical as direct administration by DSW, and most importantly, such a choice will leave the door open for a change in 1965, if a change then seems desirable.

D. For the preservation of the self-esteem of the impoverished elderly, and for the maintenance of the free-enterprise system, the best arrangement would be one under which state and federal funds might be used to pay portions of health-insurance premiums. During the first two years of its operation, the MAA program will uncover facts on which optimal group insurance for these people must be based.

We repeat: the door should be kept open for the consideration of the insurance alternative in 1965!



Iowa Chapter of the American Academy of General Practice

Annual Scientific Assembly of the AAGP

The fifteenth annual Scientific Assembly of the American Academy of General Practice will be held at McCormick Place, in Chicago, April 1-4.

A challenging program is being offered. It will begin with an afternoon symposium on "The Role of Government in Medical Care," with Dr. Walter H. Judd, a Congressman from Minnesota for many years, as moderator. The panelists are to be Dr. Durward Hall, Republican Congressman from Missouri; Senator Hubert H. Humphrey (D., Minn.); Senator Everett M. Dirksen (R., Ill.), the Senate minority leader; and a representative from the Department of Health, Education and Welfare. The last hour of the program, on this first afternoon, will be given over to the questions that the audience may wish to direct to members of the panel. This discussion in itself is sure to be worth your going to Chicago to hear.

The program for the second day, Tuesday, April 2, will cover a variety of interesting subjects, such as "Psychosis Recognition"; "Post-Institutional Care"; "Varicose Veins"; and "Anal Surgery." It is to include a gynecologic symposium on endometriosis, with topics of "Indications for D&C" and "Habitual Abortion." Papers on "Trauma of the Urinary Tract" and "Lower Urinary Tract Infection" will complete the day's schedule. Two of the speakers who are to appear on this part of the program have participated in scientific sessions of the Iowa Chapter. They are Drs. Raymond Jackman, of Rochester, Minnesota, and Ralph A. Reis, of Chicago.

The program for the third day, Wednesday, April 3, will begin with "Emphysema" and "Common Skin Diseases." The presentation on emphysema will make use of Eidophor closed-channel television. For the first time, the diagnostic and therapeutic aspects of the disease will be presented with special clarity and in magnified detail on a large screen. Another feature of this day's schedule will be two periods labelled "Come What May." These are being held open for presentations on any "hot" new developments in medical knowledge which may have come up since the program was planned. Also to be presented on Wednesday is a pediatric symposium covering "Congenital Cardiac Anomalies"; "Congenital Enzyme Defects

in Infants"; and "Blood Dyscrasias." The other topics that day will be "External Eye Diseases" and "Regional Anesthesia." Two of the speakers on that day, Drs. Malcolm A. McCannel, of Minneapolis, and John S. Lundy, of Rochester, have appeared on programs of the Iowa Chapter.

On the last morning, Thursday, April 4, the topics will be "Therapy of Hypertension"; "Arrhythmias"; and "Rehabilitation Clinic."

Besides attending the scientific program, all Academy members are urged to attend the Congress of Delegates which will convene at the Palmer House on Saturday, March 31, for the transaction of official Academy business. This is your opportunity to see your Congress in action. Members will also find it interesting to attend the meetings of the various reference committees.

Chicago being close, this is an opportunity for all Iowa physicians to attend an annual Scientific Assembly of the American Academy of General Practice.

Medical Care of the Adolescent

Harvard Medical School announces a postgraduate course in the medical care of the adolescent, to be held at Children's Hospital Medical Center, Boston, April 29 to May 3, 1963, under the direction of J. Roswell Gallagher, M.D. Members of the Iowa Medical Society will recall that Dr. Gallagher was one of the speakers at one of their recent annual meetings.

This intensive course is designed to cover the diagnosis and treatment of many disorders common in adolescence, as well as various aspects of understanding and evaluating boys and girls between 12 and 21 years of age. Among the subjects to be covered are obesity, menstrual problems, management of the adolescent's office visit, skin problems, physiologic and psychological characteristics of adolescence, school failure, gastrointestinal, cardiac and endocrine disorders, scoliosis, athletic injuries and other orthopedic problems, and the treatment of everyday personality and emotional difficulties. The fees and the cost of certain luncheons and dinners total \$180, and a check for that amount should be sent to the Assistant Dean, Courses for Graduates, Harvard Medical School, Boston 15, with each registration application.

Iowa Association of Medical Assistants

Little Things DO Count!

Noel Coward said, "A happy ship is an efficient ship." A medical office reflects smooth or rough sailing, depending upon the efficiency of its crew of medical assistants. Whoever said "plan your work, and work your plan" spoke wisely. Developing an efficient system for completing myriad duties is just one more challenge to the ingenuity and resourcefulness of the medical assistant.

Efficient management of an office is essentially the same as good housekeeping. Work is planned so as to avoid hurry and confusion. Have a place for everything, and keep everything clean and ready for use. This practice saves time, conserves property and eliminates wasted energy.

Educational psychology teaches that time and energy are saved and efficiency is increased when like activities are performed simultaneously. So, instead of filling the various dispensers for each room individually, gather all dispensers from all rooms, take them to a central work area where supplies are stored, and clean and refill all at one time. Fill a tray and make one trip do the job!

To save steps, make use of trays whenever possible. When checking supplies needed for various areas, list your needs in a notebook or on a scratch pad, make one trip to the supply room, fill the tray and restock the rooms from the tray. Having a central supply area and work room allows you to see at a glance when orders need to be placed to replenish stocks. You can keep a "want" list there to remind yourself of your needs when a salesman calls or when orders are to be placed by mail or telephone.

Keep a scratch pad and pencil beside each telephone, where you can make necessary notes to yourself or for your doctor. Don't trust your memory for the details of a message or for a telephone number. Something may distract you before you can get to your desk to make a notation.

At billing time, fold six or eight statements at one time, and then separate them as you are about to place them in envelopes. Use window envelopes to save typing names and addresses twice. Also, moisten flaps on several envelopes at one time, and then separate and seal them. Pre-stamped window envelopes bearing your return address can be ordered from your local Post Office. Then, inserting the statement and sealing the envelope are all that is needed for mailing. Of course, your

postmaster would appreciate your sorting local and out-of-town mail, thus insuring more rapid handling.

Make a list of the instruments and supplies that are needed for the various types of treatment done in your office, so that you will know in advance just what will be required for each procedure and so that a tray of essentials can be ready for the doctor when the patient appears for his appointment. If a procedure is new to you, do not hesitate to ask what will be used. Your doctor will appreciate such thoughtfulness in saving his time, and the patient will appreciate your having everything ready so that his time will not be wasted either.

When an examination or treatment is concluded, bid the patient goodbye *from your desk*, where the charge for the procedure can be given to him, where he can be given an opportunity to pay, and where a return appointment can be made, if necessary.

Are you a sack, string or box saver? A SMALL reservoir of these can come in handy when it is necessary to return goods by mail, to return lost articles to a patient, or to mail a few days' supply of a forgotten medication to a vacationer.

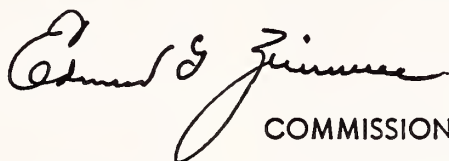
Don't discard the business card given to you by the pharmaceutical detail man. You may remember the company he represents but forget his name, and an alphabetical filing by company name can save you embarrassment. Or, your doctor may want some information from such a man, and if you have his name and address on file, your efficiency may seem, for the moment at least, superhuman!

Do you have a "rainy day list"? We always have work to do, but when an obstetrical case or emergency surgery has taken your doctor from the office, you can use the time to good advantage in making dressings, replenishing swabs, or cleaning a shelf or two. Most importantly, such a list should include a reminder to restore proper order to a disarranged file before you are asked to locate a card or folder on short notice.

These ideas are not original, but we hope you will find them useful. If you have any suggestions to share, we shall be glad to receive them and pass them on. Mail them to this correspondent at 201 Lowell St., Iowa City, Iowa.

—HELEN G. HUGHES

STATE DEPARTMENT OF HEALTH



COMMISSIONER

Drugs and Biologicals Available From the State Department of Health

VENEREAL DISEASE CONTROL

Procaine Penicillin (aqueous or oil suspension). For gonorrhea cases, 1,200,000 units for a male and a minimum of 1,800,000 units for a female; for syphilis cases, 6,000,000 to 12,000,000 units, depending upon diagnosis.

Benzathine Penicillin G (Bicillin). Distribution restricted to syphilis cases—2,800,000 to 9,000,000 units, depending upon diagnosis.

Achromycin (250 mg. capsules). Distribution limited to medically indigent syphilis patients in whom penicillin sensitivity has been definitely established.

These drugs are available without cost to physicians for the treatment (control) of reported cases of venereal disease. Requests for drugs should be made by physicians directly to the Venereal Disease Division, Iowa State Department of Health, and must be accompanied by case reports.

SKIN TEST MATERIALS

Tuberculin. *Koch's old tuberculin* may be obtained in one or the other of two strengths. The dilution sent the physician is the one he chooses to request. Each ampule of tuberculin will contain 1 cc., or 10 skin-test units. The label states the dilution.

First test strength—Each 0.1 cc. test dose contains 0.01 mg. of old tuberculin, or one international tuberculin unit. This compares with 0.00002 mg. of PPD-S.

Intermediate test strength—Each 0.1 cc. test dose contains 0.5 mg. of old tuberculin, or five international tuberculin units. This is the dilution of old tuberculin most generally recommended, and it compares with 0.0001 mg. of PPD-S.

Since funds for the purchase and distribution of tuberculin are small, the Department must limit its distribution to physicians who are using it only occasionally or in small amounts for routine office practice. On that basis, physicians who want a small supply sent each month to their offices may write to the State Department of Health, Division of Tuberculosis Control, stating whether they wish

1 cc. or 2 cc. of the tuberculin, and the strength they wish to use.

PPD can be furnished only for county medical society approved school testing programs, or other specific group programs having similar approval. For this material, apply to the Iowa Tuberculosis and Health Association, 1818 High Street, Des Moines 14.

Histoplasmin. This is supplied in 1 cc. vials, of 10 skin-test doses each.

These skin-test reagents are furnished upon request to any physician, regardless of the economic status of his patient.

IMMUNIZING AGENTS

Triple Toxoid (diphtheria, tetanus and whooping cough). In accordance with the 1961 Red Book of the American Academy of Pediatrics, the Department prefers that this be used for children under eight years of age.

Diphtheria-Tetanus Toxoid (combined, absorbed or precipitated—adult type). According to the Red Book of the American Academy of Pediatrics, this material is recommended for immunization of persons eight years of age or older.

Typhoid Vaccine Triple (typhoid, para A and para B).

Smallpox Vaccine.

This group of immunizing agents is distributed to physicians for patients who are indigent or, in the doctor's opinion, hardship cases. Also, the triple toxoid, diphtheria-tetanus toxoid and smallpox vaccines will be sent to counties, towns or cities for school immunization programs, provided the Division of Maternal and Child Health has received a statement that the county medical society of the area concerned has approved the program and has also approved including the requested immunization agents in that program. Requests for these biologics for school programs should be made to the Division of Maternal and Child Health.

Ordinarily, typhoid vaccine is not used in school immunization programs. Besides requesting it for use in indigent or medical hardship cases, physicians may request it for use in protecting persons who have been or may have been exposed to a known case of typhoid fever or to a known typhoid

carrier. Typhoid vaccine is also available for use in "disaster conditions."

Currently, the State Department of Health is distributing no poliomyelitis vaccine. Since funds for the purchase of biologics are small, and since it has been demonstrated that funds for poliomyelitis vaccine are readily available in all counties, the Department has chosen not to use its funds for the purchase of these vaccines.

RABIES CONTROL

Duch Embryo Anti-Rabies Vaccine. This is recommended in lieu of brain-tissue vaccine especially for persons who have received brain-tissue vaccine previously. It should not be used in persons sensitive to egg protein. The usual treatment consists of 14 doses.

Anti-Rabies Serum. This is limited to use in persons who have been bitten about the face and neck, or who have extensive bites on other parts of the body, and for such of those patients who can be given the material within three days after receiving the bites. It does not replace anti-rabies vaccine, but serves as an adjunct in certain situations.

Rabies Vaccine (brain tissue). This no longer is carried in stock because of a lack of demand. However, for those who are sensitive to egg protein, it can be made available.

These rabies materials are sent directly to physicians upon request. If the physician states that the patient cannot pay for the vaccine or serum, he is not billed for it. See "Indications and Products for Anti-Rabies Treatment," in the June, 1961, issue of this JOURNAL (pp. 376-379).

DENTAL MATERIALS

Sodium Fluoride Powder. This reagent, for topical applications to children's teeth, may be obtained by any dentist who requests it from the State Hygienic Laboratory, Medical Laboratories Building, Iowa City.

GAMMA GLOBULIN

See release on gamma globulin distribution dated May 1, 1962.

SNAKE ANTI-VENOM

Enough of this material for one treatment is kept in the offices of the State Department of Health and at the following poison centers set up by the Division of Maternal and Child Health:

Iowa Poison Center	Iowa Methodist Hospital, Des Moines
Poison Sub-Center	St. Joseph Mercy Hospital, Mason City
Poison Sub-Center	Lutheran Hospital, Fort Dodge
Poison Sub-Center	Dickinson County Memorial Hospital, Spirit Lake

VACCINES OCCASIONALLY REQUIRED FOR INTERNATIONAL TRAVELERS

These, such as cholera and typhus vaccines, are not supplied through the State Department of Health. The physician may purchase any of the vaccines except yellow fever vaccine through his local pharmacy. Since yellow fever vaccine is very fragile, it may be given in no place other than a certified yellow fever immunization station. For this reason, a yellow fever immunization center has been set up at the S.U.I. Student Health Service, in Iowa City. The vaccine is given only on Wednesdays from 10:00 a.m. to 12:00 m., by appointment. The telephone number is 337-3111, extension 247.

Activities of the Division of Licensure

The Division of Licensure, operating under Chapter 147, Code of Iowa, regulates the licensing of certain professions to practice in the State of Iowa. Chapter 147 states: "No person shall engage in the practice of medicine and surgery, podiatry, osteopathy, osteopathy and surgery, chiropractic, nursing, dentistry, dental hygiene, optometry, cosmetology, barbering, funeral directing or embalming as defined in the following chapters of this title, unless he shall have obtained from the state department of health a license for that purpose." It is the responsibility of the various examining boards to review qualifications, give examinations and certify to the Commissioner of Public Health those individuals who are acceptable for licensure by the State of Iowa, in their respective professions.

The work of the Division consists of handling correspondence regarding licensure requirements, receiving of applications and fees for examinations and licensure, printing examinations, proctoring examinations and issuing licenses, after certification by the appropriate boards of examiners.

All material connected with each examination for a license shall be filed with the State Department of Health and preserved for five years as a part of the records of the Department, during which time said records shall be open to public inspection.

The Boards of Cosmetology, Barbering, Chiropractic, Medicine and Surgery and Osteopathy operate under separate offices from the Division of Licensure; however, all licenses except those in cosmetology and barbering are made out by this Division and submitted to the Commissioner of Public Health for his signature.

Under the provisions of the Code of Iowa, Chapter 135D, the State Department of Health is authorized to administer the laws relating to mobile home parks. The Division of Licensure accepts applications and fees for licensure and at the direc-

tion of the Division of Public Health Engineering, issues licenses for a period of one year.

BOARDS OF LICENSURE

FEES COLLECTED, APPROPRIATIONS AND EXPENDITURES
IN THE FISCAL BIENNIUM JULY 1, 1960 TO JUNE 30,
1962

State law provides that these examining boards shall function through the State Department of Health, but the details of their operation vary with the terms of the statutes setting up these different professional licensure groups. The following constitutes a summary, and should anyone desire more information, he can obtain it from the examining board in question or from the Division of Licensure, State Department of Health.

Each board derives fees from a variety of sources such as examinations, renewals of license, certifications of grades, reinstatements, itinerant practitioner licenses, and licenses issued on the basis of reciprocity.

CHIROPRACTIC EXAMINERS

Chiropractic fees were collected in the amount of \$4,814.00 during this period. Two examinations were held, and 56 new licenses were issued. There are approximately 1,485 practitioners currently registered in Iowa, and the renewal fee is \$1.00 per year. Receipts are deposited in the State General Revenue Fund. The appropriation for the biennium was \$10,860.00, and the total expended was \$10,934.82.

DENTAL EXAMINERS

Dentistry fees were collected in the amount of \$15,927.00 during the past fiscal biennium. New licenses were issued to 199 dentists, and to 97 dental hygienists. Two examinations were held. There are approximately 2,277 dentists and 246 dental hygienists currently registered in this state. The renewal fee for dentists is \$5.00 per year, \$4.00 of which goes to a special fund for use by the Board of Dental Examiners, and \$1.00 goes into the General Revenue Fund. The hygienists' renewal fee is \$1.00, and this money is deposited in the General Revenue Fund. The appropriation for the biennium was \$5,300.00, and the total expenditures for the biennium have been \$6,693.93.

FUNERAL DIRECTOR AND EMBALMER EXAMINERS

Funeral director and embalmer fees were collected in the amount of \$12,804.00 during these two years, 37 new licenses were issued, and the examination was given four times. There are approximately 1,360 such practitioners currently registered in the state, and their renewal fee is

\$5.00, of which \$3.00 goes into a special fund for the use of the board, and \$2.00 is deposited in the General Revenue Fund. The appropriation for the biennium was \$7,200.00 and the total expenditures have been \$6,300.52.

MEDICAL EXAMINERS

Medicine and surgery fees were collected in the amount of \$40,286.00 during this period. Three hundred thirty-five new medical licenses and 33 new resident physician licenses were issued, and the licensure examination was given five times. There are approximately 4,745 doctors of medicine currently registered, and their renewal fee is \$3.00 per year. Receipts are deposited in the state's General Revenue Fund. The appropriation for the biennium was \$30,060.00, and the total expenditures for the biennium were \$31,060.12.

OPTOMETRY EXAMINERS

Optometry fees were collected in the amount of \$4,611.00. Nineteen new licenses were issued, and the examination was given twice. There are approximately 528 optometrists currently registered in the State of Iowa. Their renewal fee is \$5.00 per year, and this money is deposited in the General Revenue Fund. The appropriation for the biennium was \$2,500.00, and the total expenditures were \$2,733.23.

OSTEOPATHY EXAMINERS

Osteopathy fees were collected in the amount of \$7,266.25 during this period. The examinations were held five times, and 124* new licenses were issued. There are approximately 1,000 practitioners currently registered in Iowa. The osteopaths' renewal fee is \$1.00 per year, and receipts are deposited in the General Revenue Fund. The appropriation for the biennium was \$4,600.00, and the total expenditures were \$4,463.69.

PODIATRY EXAMINERS

Podiatry fees were collected in the amount of \$1,333.00 during this period, the examination was given twice, and 10 new licenses were issued. Currently, there are approximately 197 podiatrists registered in Iowa. Their renewal fee is \$5.00 per year, and receipts are deposited in the General Revenue Fund. The appropriation for the biennium was \$1,000.00, and the total expenditures for the biennium were \$1,515.78.

* Twenty or 30 of these 124 represent new licensees. The larger number includes previously licensed osteopathic physicians who took the examination for osteopathic physician and surgeon.

Salmonellosis

On July 22, 1962, a family reunion was held in Cerro Gordo County at which seventeen persons ate both dinner and supper. Fifteen of these persons and three neighborhood youngsters became ill. Of four who were hospitalized, one, aged 85, died. Laboratory findings confirmed the clinical manifestations of salmonellosis (*S. typhimurium*) found in the stools of two of the patients.

Although none of the food served was available for examination, home-made ice cream, with raw milk and cream used to prepare the uncooked custard, was the food item incriminated. Because of the time lapse between the date of the reunion and the date we were notified (37 days), an accurate account of the foods eaten by all persons was not available. However, it is reasonable to assume that the home-made ice cream was the source of contamination because three neighbor children, who did not attend the family gathering, became sick from sampling the ice cream soon after it was prepared.

One of the family group, who was not ill, did not eat any ice cream. The other person, who ate ice cream, was listed as not being ill. However, this person lives out of the state and could not be directly interviewed.

Incubation periods ranged from 20 to 72 hours. The median was 28 hours.

In late August eggs and unpasteurized cream and milk were obtained from the farm where the original ingredients were purchased for use in the ice cream. Chicken droppings and swabbings of milk utensils and the general area of the milk house were also gathered and sent to the State Hygienic Laboratories at Iowa City, Iowa. Cultural findings were negative to salmonella from the above specimens submitted.

General Surgery Is Called Overcrowded

Young men who are ready to choose among the types of medical practice should study the results of a recent survey conducted by the American College of Surgeons, and if they accept the results of that study, they will steer away from general surgery and from obstetrics and gynecology. The ACS members—or a considerable majority of them—think that there are already too many practitioners of those specialties.

In the largest medical survey of its kind, the ACS sent questionnaires to 20,672 surgeons, and received replies from 13,477 of them. The consensus was that new men will find the going easiest in psychiatry, brain surgery, otolaryngology or general practice. About 40 per cent of the respondents said there are too few ophthalmologists in their towns.

Over 55 per cent said there are "too many" gen-

eral surgeons in their localities. Fifty-seven per cent said their communities have too few psychiatrists, but surprisingly, 10 per cent said there were too many. More than half said that there aren't enough general practitioners.

The surgeons were also asked some questions about the fees that they charge, and whether they vary their charges according to the patients' incomes, even though both rich and poor are covered by insurance. Those ones of their answers haven't yet been summarized.

Morbidity Report for Month of December, 1962

Diseases	1962 Dec.	1962 Nov.	1961 Dec.	Most Cases From These Counties
Diphtheria	0	1	0	
Scarlet fever	261	198	195	Clay, Jefferson, Johnson, Kossuth, Polk
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	744	295	217	Des Moines, Hancock, Scott, Winnebago
Whooping cough	13	7	16	Boone, Cerro Gordo
Brucellosis	7	3	12	Polk
Chickenpox	877	303	359	Clay, Dubuque, Polk, Scott
Meningococcic meningitis	0	2	4	
Mumps	154	86	356	Clay, Polk, Scott
Poliomyelitis	0	0	2	
Infectious hepatitis	29	29	148	Polk, Pottawattamie, Scott
Rabies in animals	20	9	18	Fayette, Polk, Sac
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	32	23	22	For the state
Syphilis	70	65	100	For the state
Gonorrhea	157	102	134	For the state
Histoplasmosis	21	5	3	Cerro Gordo (delayed re- ports)
Food Intoxication	0	0	325	
Meningitis (type unspecified)	0	2	0	
Diphtheria carrier	29	0	0	Woodbury (delayed re- ports)
Aseptic meningitis	0	1	0	
Salmonellosis	0	3	2	
Tetanus	0	3	0	
Chancroid	1	0	1	Ida
Encephalitis (type unspecified)	1	0	1	Allamakee
H. influenza meningitis	0	0	0	
Amebiasis	0	13	0	
Shigellosis	1	1	1	Polk
Influenza	0	0	8	



Woman's Auxiliary News



Iowa Takes a New Look at AMA-ERF

After attending a very inspiring regional AMA-ERF conference it is apparent to me that our program in Iowa presents a real challenge. Remedial work and effort are needed to bring it into proper perspective with relation to our many fine accomplishments in other activities. The Auxiliary's contributions for last year averaged 41 cents per capita.

Slogans and unique phrases are only words until they are translated into action. However, we have signs of activity such as news of county fund raising events which include sales of cards, a silent auction, a money tree and use of the Christmas card.

We must challenge the imagination and talents of all our members. In the program of the Medical Auxiliary to "assist in the advancement of medicine and public health," there is no better way to preserve the heritage of free medicine in America than to support medical education and research.

The success or failure of any program is not the sole responsibility of a chairman and a few officers, but rather is the responsibility of the entire membership. In individual action lies the secret of success.

As Mrs. Thuss so aptly said about the county Auxiliary member: "She sees with her eyes the needs of her community. She speaks from the heart in support of the objectives of the Auxiliary and AMA; and she works toward our aim for excellence in the Auxiliary program of 1962-63."

—MRS. A. C. RICHMOND
President

Annual Meeting

It isn't too early to make your plans to attend the 1963 Annual Meeting, scheduled for April 8 and 9 at the Savery Hotel, Des Moines. The Board of Directors will meet at the Savery on Sunday afternoon, April 7. The committees are working on plans now for what is hoped will be the most interesting, most informative and the best meeting yet. Your attendance will help to accomplish those objectives.

Now Is the Time

It is very important that dues be paid by March 1, so that your treasurer will be able to meet the National Auxiliary's deadline. Her report is due in the Chicago office by March 31. The number of members whose dues have been reported by March 31 will govern the number of delegates the Iowa Auxiliary will have to represent you at the national meeting in June.

National dues are acceptable until June 30, but the state Auxiliary is hoping there will be no tardy dues this year. Have you mailed yours?

Your Finance Chairman, Mrs. E. A. Vorisek, says:

1. Send the Health Education Loan Fund contribution to the HELF Treasurer: Mrs. A. W. Puntenney, 421 South Marshall Street, Boone, Iowa.

2. Send BULLETIN subscriptions (\$1.00 per year) to Mrs. G. S. Atkinson, 1004 Third Avenue East, Oskaloosa.

3. For memorials send notices of the deaths of members of your Auxiliary to Mrs. E. A. Vorisek, 6205 Woodland Road, Des Moines 12.

4. Also, send notices on deceased members of the Iowa Medical Society to Mrs. E. A. Vorisek. The Iowa Auxiliary honors deceased Auxiliary members by a memorial contribution to HELF, and deceased members of the Iowa Medical Society by a memorial contribution to AMA-ERF. Be sure to include the name and address of the family to whom acknowledgement of the Auxiliary Memorial gift should be sent.

Who Belongs to the Woman's Auxiliary?

There are 82,700 physicians' wives who use their time and talents to help their husbands provide the best medical care in the world to the people in their communities. Are you one of them?

They engage in far-reaching and productive activities, guided and supervised by leaders in the medical profession who know the needs of medicine.

They work at community health projects in which your help is very much needed. Your medical society would greatly appreciate your assistance.

COUNTY AUXILIARIES

Black Hawk County

The Annual Medicine Ball sponsored by the Black Hawk Medical Auxiliary is scheduled for Wednesday, February 6. The Ball is to be held at the Tavern on the Green, in Waterloo, and the theme will be "Musical Memories."

Dinner is to be served from 7:30 to 10:00 p.m., with dancing from 9:30 p.m. to 12:30 a.m. to music of Vance Dixon's Band.

Mrs. Lewis Zager is serving as general chairman, assisted by the co-chairmen of the Program Committee, Mrs. Russell Gerard, Mrs. Richard Waldorf and Mrs. Richard Acker. Mrs. J. Eugene Goldberg is in charge of decorations; Mrs. Arthur Perley and Mrs. George Bairnson are the Publicity Chairmen; and Mrs. Craig Ellyson and Mrs. Gardner Phelps are Ticket Co-Chairmen.

Buchanan County

Following is an activity résumé of the Buchanan County Mental Health Committee.

October—We donated a two-place hot plate to the special education classes.

November—All the children (45) in the special education classes were our guests for a Thanksgiving Day dinner (November 24), served at the St. John's School Cafeteria, together with the three teachers and the superintendent of Buchanan County Schools.

Our Society takes a very active interest in these children in special education. We have volunteers who assist the teachers, every Friday, in art, sewing, and woodwork classes.

December—On the 18th we had a Christmas party for the residents of the Buchanan County Home. We served a lunch, gave each resident a gift, and had a carol "sing" at which time many of the residents favored us with solos.

During the Christmas party at the Mental Health Institute in Independence, gifts were presented to each child enrolled in the children's program at the institution.

—MRS. D. W. INGHAM (MAIBELLE)
Mental Health Chairman

Cerro Gordo County

The Cerro Gordo County Medical Auxiliary met on Tuesday, January 8, at the home of Mrs. Robert Powell. The business meeting was conducted by the president, Mrs. Paul Potter.

John Mooney, Jr., presented the film "No Man Is a Stranger," showing the progress that has been achieved in treating the mentally ill in Haiti. The documentary film unfolded the story of rehabilitation of three mentally ill patients, and contrasted the treatment in the ultramodern psychiatric clinic in Port-au-Prince with the primitive camp of dirty shacks at Port Beudet.

Alert!!

The Essay Contest is nearing its final weeks! Topic choice: "The Advantages of Private Medical Care" or "The Advantages of the American Free Enterprise System Over Communism."

Have you followed up on your contact with your schools regarding participation? Remember, essays must be submitted to the county Auxiliary or medical society before *March 1*.

The first three prize-winning essays at county level must be sent to: Woman's Auxiliary to the Iowa Medical Society, 529-36th Street, Des Moines 12 by *March 15*.

Caduceus Capers

The dance for the benefit of the Health Education Loan Fund this year will be held at the Fort Des Moines Hotel on Tuesday evening, April 9. Standard Medical and Surgical Company will again cooperate with the Auxiliary on this benefit project. Plan to attend and enjoy a social evening with friends, as well as doing your bit for the HELF.

Note

Sorry—the gremlins were with us last month. The new address for Millie Moe (Mrs. R. H.) is 906 Grandview Avenue, Council Bluffs. Will you please make this change in your Auxiliary YEAR-BOOK?

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. A. C. Richmond, 1132 A Avenue, Fort Madison
President-Elect—Mrs. G. J. McMillan, 436 Avenue C, Fort Madison
Recording Secretary—Mrs. N. A. Schacht, 1025 North 23rd Street, Fort Dodge

Corresponding Secretary—Mrs. F. L. Poepsel, Box 176, West Point
Treasurer—Mrs. M. B. Cunningham, Norwalk
Editor of THE NEWS—Mrs. R. H. Palmer, Box 568, Postville

JOURNAL

of The

IOWA MEDICAL SOCIETY



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longest
"needle"

in the
world



It never stings—needs no sterilizing. It reaches all the way from your office to the patient's home to give him potent penicillin therapy as often and as long as he needs it. It's an *oral* "needle," of course . . . V-Cillin K® . . . the penicillin that makes oral therapy as effective as intramuscular, but safer—and much more pleasant.

V-Cillin K® (potassium phenoxymethyl penicillin, Lilly) (penicillin V potassium)

Sometimes your judgment dictates parenteral penicillin for your office patients. But to extend that therapy, take advantage of the longest "needle" in the world . . . V-Cillin K.

Tablets V-Cillin K, 125 or 250 mg. (scored).

V-Cillin K, Pediatric, 125 mg. per 5 cc., in 40 and 80-cc.-size packages.

This is a reminder advertisement. For adequate information for use, please consult manufacturer's literature. Eli Lilly and Company, Indianapolis 6, Indiana.



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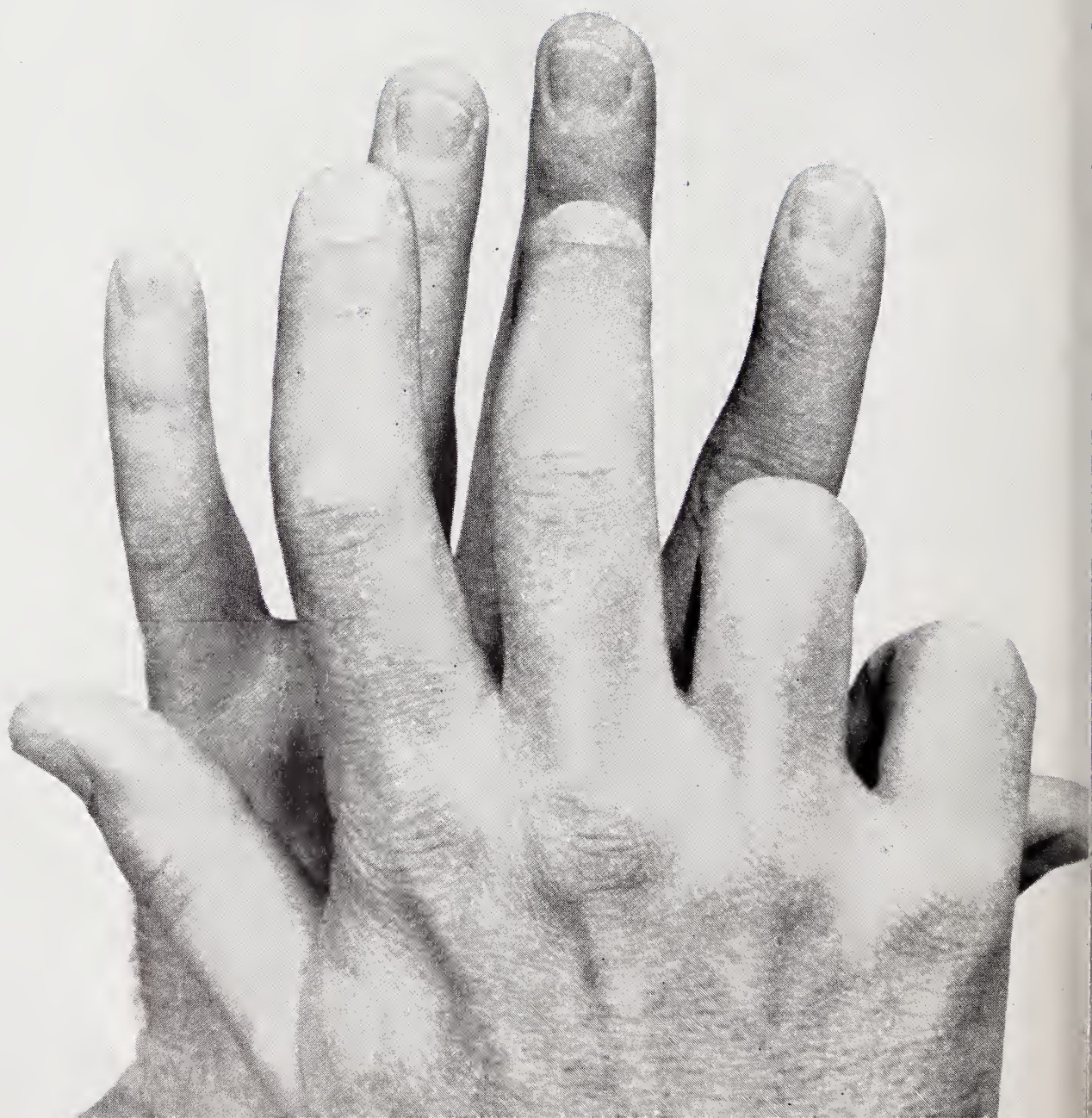
MARCH, 1963

in severe respiratory infections
refractory to other measures

CHLOROMYCETIN

(chloramphenicol, Parke-Davis)

for established
clinical efficacy against
susceptible organisms



In Friedlander's Pneumonia^{3,13}

Although the prognosis in Friedlander's pneumonia is poor, treatment with CHLOROMYCETIN has shown a good response when susceptible strains of *Klebsiella pneumoniae* are incriminated.

In Hemophilus Influenzae Pneumonia^{3,4,13,14}

Because the invading organism is usually sensitive to CHLOROMYCETIN, this agent is generally effective in pneumonias caused by *H. influenzae*.

In Staphylococcal Pneumonia^{1-8,13}

CHLOROMYCETIN continues to remain effective against many resistant strains of staphylococci, and—alone or in combination with other antibiotics—should be considered when other antistaphylococcal drugs are ineffective.

In Acute Epiglottitis^{4,10,11}

This condition is most often caused by *H. influenzae*, most strains of which are sensitive to CHLOROMYCETIN. Therapy should be instituted at once, since the disease may progress from the first symptoms to a severe respiratory obstruction in four to six hours.

In Pneumonias Due to Gram-negative Bacilli⁹

Because of its broad-spectrum activity, CHLOROMYCETIN is often effective in pneumonias caused by sensitive strains of *Aerobacter*, *Proteus* of various species, *Paracolobactrum*, and other gram-negative pathogens encountered with increasing frequency in serious respiratory tract infections.

In Staphylococcal Empyema¹²

The infiltrating lesions of staphylococcal empyema are often difficult to eradicate. While CHLOROMYCETIN should only be used when the infection has been resistant to treatment with other antistaphylococcal drugs, therapy with CHLOROMYCETIN, in conjunction with surgical procedures, will often bring favorable results.

CHLOROMYCETIN (chloramphenicol, Parke-Davis) is available in various forms, including Kapseals® of 250 mg., in bottles of 16 and 100. See package insert for details of administration and dosage.

Warning: Serious and even fatal blood dyscrasias (aplastic anemia, hypoplastic anemia, thrombocytopenia, granulocytopenia) are known to occur after the administration of chloramphenicol. Blood dyscrasias have occurred after both short-term and prolonged therapy with this drug. Bearing in mind the possibility that such reactions may occur, chloramphenicol should be used only for serious infections caused by organisms which are susceptible to its antibacterial effects. Chloramphenicol should not be used when other less potentially dangerous agents will be effective, or in the treatment of trivial infections such as colds, influenza, or viral infections of the throat, or as a prophylactic agent.

Precautions: It is essential that adequate blood studies be made during treatment with the drug. While blood studies may detect early peripheral blood changes, such as leukopenia or granulocytopenia, before they become irreversible, such studies cannot be relied upon to detect bone marrow depression prior to development of aplastic anemia.

References: (1) Thacher, H. C., & Fishman, L.: *J. Maine M. A.* **52**:84, 1961. (2) Hopkins, E. W.: *Postgrad. Med.* **29**:451, 1961. (3) Hall, W. H.: *M. Clin. North America* **43**:191, 1959. (4) Krugman, S.: *Pediat. Clin. North America* **8**:1199, 1961. (5) Ede, S.; Davis, G. M., & Holmes, F. H.: *J.A.M.A.* **170**:638, 1959. (6) Wolfsohn, A. W.: *Connecticut Med.* **22**:769, 1958. (7) Calvy, G. L.: *New England J. Med.* **259**:532, 1958. (8) Hendren, W. H., III, & Haggerty, R. J.: *J.A.M.A.* **168**:6, 1958. (9) Cutts, M.: *Rhode Island M. J.* **43**:388, 1960. (10) Berman, W. E., & Holtzman, A. E.: *California Med.* **92**:339, 1960. (11) Vetto, R. R.: *J.A.M.A.* **173**:990, 1960. (12) Sia, C. C. J., & Brainard, S. C.: *Hawaii M. J.* **17**:339, 1958. (13) Rosenthal, I. M.: *GP* **17**:77 (March) 1958. (14) Gaisford, W.: *Brit. M. J.* **1**:230, 1959.

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The JOURNAL of THE IOWA MEDICAL SOCIETY



Vol. LIII

MARCH, 1963

No. 3

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ROBERT N. LARIMER, M.D.....Sioux City
DANIEL F. CROWLEY, M.D.....Des Moines

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IOWA MEDICAL SOCIETY

Organized in 1850

1963 ANNUAL MEETING

April 7-10

Hotel Fort Des Moines

Des Moines



Hotel Fort Des Moines



GEORGE H. SCANLON, M.D.

President

Iowa Medical Society

1962-1963

GENERAL SESSIONS

Grand Ballroom

Monday Morning, April 8

8:00 a.m. EXHIBITS

8:55 a.m. Invocation

The Reverend E. H. Hoenig, Grinnell, Iowa
Chaplain, St. Francis Hospital

9:00 a.m. President's Address

George H. Scanlon, M.D., Iowa City, Iowa
President, Iowa Medical Society

9:30 a.m. Lawrence J. Halpin, M.D., Cedar Rapids, Iowa

"Treatment of Allergic Emergencies"

10:00 a.m. Paul T. Cash, M.D., Des Moines, Iowa

"Modern Drug Therapy in Clinical Psychiatry"

10:30 a.m. RECESS TO VISIT EXHIBITS

11:15 a.m. Kenneth C. Sawyer, M.D., Denver, Colorado

"Town and Gown"

11:45 a.m. Mr. Jenkin L. Jones, Tulsa, Oklahoma

"The Birth of Wisdom"

12:15 p.m. RESERVATION LUNCHEON—Wedgewood Room

PANEL DISCUSSION: WHAT TIME OF DAY IS IT IN THE WELFARE STATE?

Moderator—Tom D. Throckmorton, M.D., Des Moines, Iowa

"Is a Penny Saved a Penny Earned?"
—Mr. Blough

"Who Pays the Bill?"—Dr. Sawyer

"Freedom of the Press—Its Responsibilities"—Mr. Jones

"If We Could Turn Back the Clock"—
Dr. Baugh

"The Cure for Government by Pressure"—Senator Morton

Monday Afternoon, April 8

2:00 p.m. The Honorable Thruston B. Morton, Louisville, Kentucky, United States Senator

"Practical Politics"

2:30 p.m. Mr. Roger M. Blough, New York City, New York

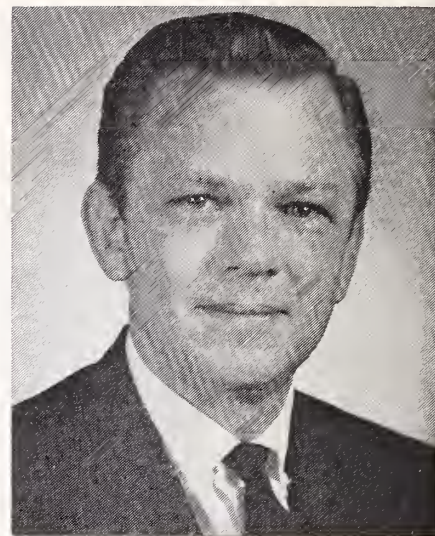
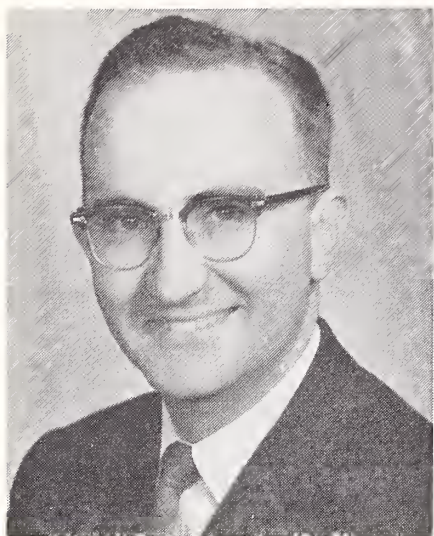
"Economic Prescriptions Unlimited"

3:00 p.m. RECESS TO VISIT EXHIBITS

3:45 p.m. C. W. Baugh, M.D., Saskatoon, Saskatchewan

"The Saskatchewan Story"

The scientific program will be acceptable to the American Academy of General Practice for 10 hours of Category II credit.



David Baridon, Jr., M.D., of Des Moines (left), is certified by the American Board of Pathology, and is a member of the College of American Pathologists and American Society of Clinical Pathologists. **Charles W. Baugh, M.D., of Saskatoon, Saskatchewan (center)**, is an assistant professor of medicine at the University of Saskatchewan, and medical director, Red Cross Blood Transfusion Service. **Charles M. Blackburn, M.D., of Rochester, Minnesota (right)**, is a staff member of the section of Clinical Oncology, Mayo Clinic, an assistant professor of medicine, Mayo Foundation, University of Minnesota, and a consultant, National Cancer Institute.



Mr. Roger M. Blough, of New York City (left), is chairman of the board of directors, United States Steel Corporation, a member of the American Bar Association and of the Council on Foreign Relations, and a trustee of the National Industrial Conference Board, of Presbyterian Hospital, and of the National Fund for Medical Education. **Miss Alice Budny, of Milwaukee (center)**, is president of the American Association of Medical Assistants, and advisor to the Milwaukee Institute of Technology, and member of the Speakers Bureau of the Milwaukee School Board. **Paul T. Cash, M.D., of Des Moines (right)**, is certified by the American Board of Psychiatry and Neurology, is a fellow of the American Psychiatric Association, and is a member of the American Electroencephalographic Society, of the Association for Research in Nervous and Mental Diseases, and of the American Academy of Neurology.

General Session (Continued)

Grand Ballroom

Tuesday Morning, April 9

8:00 a.m. EXHIBITS

9:00 a.m. Mr. Robert B. Throckmorton, Des Moines, Iowa

“Kerr-Mills at Home”

9:30 a.m. David Baridon, Jr., M.D., Des Moines Iowa

“Practical Cervical Cytology”

10:00 a.m. Robert C. Hardin, M.D., Iowa City, Iowa

“Trends in Medical Education”

10:30 a.m. RECESS TO VISIT EXHIBITS

11:15 a.m. Fred T. Kolouch, M.D., Twin Falls, Idaho

“The Role of the Patient in Surgical Convalescence”

12:00 p.m. ERSKINE MEMORIAL LECTURE—Grand Ballroom—Luncheon—Open to All Members

PANEL DISCUSSION: CANCER OF THE BREAST

Robert T. Tidrick, M.D., Iowa City, Iowa, Moderator

Charles M. Blackburn, M.D., Rochester, Minnesota

Donald S. Childs, Jr., M.D., Rochester, Minnesota

Malcolm B. Dockerty, M.D., Rochester, Minnesota

Charles W. McLaughlin, Jr., M.D., Omaha, Nebraska

Tuesday Afternoon, April 9

2:00 p.m. Wendell Johnson, Ph.D., Iowa City, Iowa

“Stuttering From the Horse’s Mouth”

2:30 p.m. William C. Keettel, M.D., Iowa City, Iowa

“The Use of Hormones in the Female”

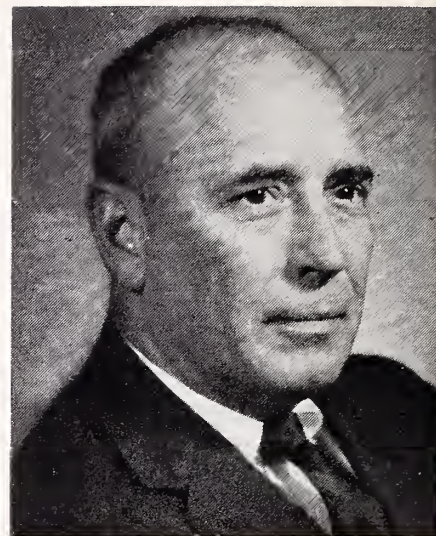
3:00 p.m. RECESS TO VISIT EXHIBITS

3:45 p.m. Miss Alice Budny, Milwaukee, Wisconsin

“Your Medical Assistant—Asset or Liability”

4:15 p.m. Ernest B. Howard, M.D., Chicago, Illinois

“The Medical Profession—1963”



Donald S. Childs, Jr., M.D., of Rochester, Minnesota (left), is head of the Section of Therapeutic Radiology, Mayo Clinic, a member of the board of trustees of the American Board of Radiology and a consultant to the United States Atomic Energy Commission. **Malcolm B. Dockerty, M.D., of Rochester, Minnesota (center)**, is head of the department of Surgical Pathology, Mayo Clinic, and a professor of pathology, Mayo Foundation for University of Minnesota. **Lawrence J. Halpin, M.D., Cedar Rapids (right)**, is a fellow and past-president of the American College of Allergists, a member of the editorial board of the *ANNALS OF ALLERGY*, and speaker of the Iowa Medical Society House of Delegates.



Robert C. Hardin, M.D., of Iowa City (left), is dean of the S.U.I. College of Medicine, a consultant to the Veterans Administration Hospitals in Iowa City and Des Moines, and a consultant in pathology and allied sciences to the Office of the Surgeon General, U. S. Army. **Ernest B. Howard, M.D., of Chicago (center)**, is assistant executive vice-president of the American Medical Association, and he was chief of the U. S. State Department's mission to Peru in 1946-47, and recipient of Peru's highest decoration, the Order of the Sol. **Wendell Johnson, Ph.D., of Iowa City (right)**, is a professor of speech pathology and psychology at SUI, a fellow and past president of the American Speech and Hearing Association, chairman of the American Speech and Hearing Foundation, a fellow of the American Psychology Association, and a consultant in speech pathology to the national office of the U. S. Veterans Administration.

Special Meetings and Dinners

Sunday, April 7

AMERICAN MEDICAL WOMEN'S ASSOCIATION, IOWA BRANCH 19

The annual meeting of the American Medical Women's Association, Iowa Branch 19, will be held at the home of Dr. Jean Glissman, 2031 70th Street, Des Moines at 7:30 p.m. All Iowa medical women are invited to attend.

GOLF TOURNAMENT

The Annual Golf Tournament will be held in Des Moines at the Wakonda Club. Physicians may begin play at any time during the day, but the majority will start at 1 p.m. Dinner and awarding of prizes will follow. Reservations should be made with Dr. Harold J. McCoy, 212 Bankers Trust Building, Des Moines 9.

Monday, April 8

IOWA ACADEMY OF SURGERY

Wakonda Club

Business Meeting: 6 p.m.

Social Hour: 6:30 p.m.—Dinner: 8 p.m.

Reservations: R. C. Schropp, M.D.

1407 Woodland Avenue, Des Moines 14

IOWA ASSOCIATION OF PATHOLOGISTS AND IOWA SOCIETY OF MEDICAL TECHNOLOGISTS

Cloud Room, Des Moines Municipal Airport

Social Hour: 6:30 p.m.—Dinner: 7:45 p.m.

Guest Speaker: J. L. Titus, M.D.,

Rochester, Minnesota

Department of Pathologic Anatomy, Mayo Clinic

Reservations: F. C. Coleman, M.D.

Mercy Hospital, Des Moines

IOWA ORTHOPEDIC SOCIETY

South Room—Des Moines Club

Social Hour: 6 p.m.—Dinner: 8 p.m.

Reservations: W. E. Catalona, M.D.

309 East Third Street, Muscatine

IOWA PSYCHIATRIC SOCIETY

West Room—Hotel Savery

Business Meeting: 5 p.m.

Social Hour: 6 p.m.—Dinner: 7 p.m.

Reservations: H. C. Merillat, M.D.

2801 Woodland Avenue, Des Moines 12

IOWA RADIOLOGICAL SOCIETY

Hotel Fort Des Moines—Third Floor

Business Meeting—5 p.m.

Des Moines Club

Social Hour: 6 p.m.—Dinner: 7 p.m.

Reservations: L. L. Maher, M.D.

1419 Woodland Avenue, Des Moines 14

IOWA CHAPTER, INTERNATIONAL COLLEGE OF SURGEONS

Des Moines Club

Social Hour: 6 p.m.—Dinner: 7 p.m.

Frank R. Peterson, M.D., Cedar Rapids, will present the Bernard C. Barnes Memorial Lecture

Reservations: M. T. Bates, M.D.

1068 Fourth Street, Des Moines 14

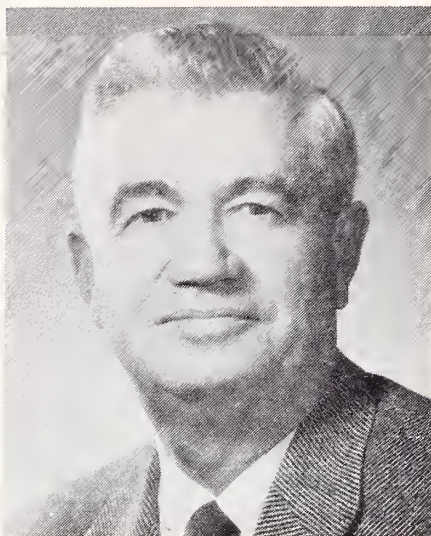
**All members of the IMS
are encouraged to attend**

MEETINGS OF THE HOUSE OF DELEGATES

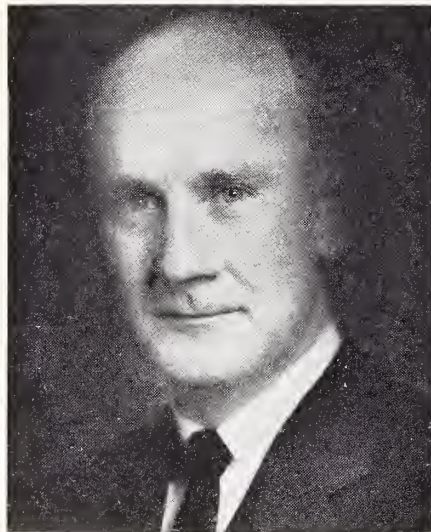
Sunday, April 7—10 a.m.

**Wedgewood Room—
Hotel Fort Des Moines**

**Wednesday, April 10—8 a.m.
Grand Ballroom—Hotel Savery**



Mr. Jenkin L. Jones, of Tulsa (left), is editor of the *TULSA TRIBUNE*, vice-president of the Tulsa Tribune Company, and a past-president of the American Society of Newspaper Editors. **William C. Keettel, M.D., of Iowa City (center)**, is professor and head of the Department of Obstetrics and Gynecology at the SUI College of Medicine, a fellow of the American College of Surgeons, and a member of the Central Association of Obstetricians and Gynecologists, of the American College of Obstetricians and Gynecologists, of the Society for Gynecological Investigation, of the American Gynecological Society, and of the Association of Professors of Gynecology and Obstetrics. **Fred T. Kolouch, M.D., Ph.D., of Twin Falls, Idaho (right)**, is certified by the American Board of Surgery, is a fellow of the American College of Surgeons, and is a member of the American Society of Clinical Hypnosis, of the Society for Experimental Biology and Medicine, of the Western Surgical Association, of the American Academy of Science, and of the American Association of Anatomists.



Charles W. McLaughlin, Jr., M.D., of Omaha (left), is professor of surgery at the University of Nebraska College of Medicine, is governor for Nebraska of the American College of Surgeons, is certified by the American Board of Surgery, and is a member of the Central, Western and Southern Surgical Associations. **Hon. Thruston B. Morton, of Louisville (center)**, is a U. S. Senator from Kentucky, is a member of the Senate Finance and Commerce Committee and was national chairman of the Republican Party from 1959-1961. **Kenneth C. Sawyer, M.D., of Denver (right)**, is an associate professor of clinical surgery to the University of Colorado Medical School, is surgical consultant at Fitzsimons Army Hospital, in Denver, and at the Veterans Administration Hospital in Grand Junction, is a diplomate of the American Board of Surgery, is a fellow of the American College of Surgeons, and is a member of the AMA Council on Medical Education and Hospitals, of the Southwestern Surgical Congress, of the Western Surgical Association, and of the World Medical Association Founders Group.

Special Meetings and Dinners (Continued)

IOWA SOCIETY OF ANESTHESIOLOGISTS

Ranch and Arizona Rooms—Hotel Fort Des Moines

Social Hour: 6 p.m.—Dinner: 7:15 p.m.

Reservations: T. A. Bond, M.D.

711 Equitable Building, Des Moines 9

Tuesday, April 9

LEGISLATIVE CONTACT MEN

Grand Ballroom—Hotel Savery

Breakfast: 7:30 a.m.

PRESIDENT'S RECEPTION AND ANNUAL BANQUET

Hotel Fort Des Moines

Reception: 6 p.m.—Wedgewood Room

Banquet: 7 p.m.—Grand Ballroom

IOWA SOCIETY OF INTERNAL MEDICINE

Johnny and Kay's Restaurant

Social Hour: 6 p.m.—Dinner: 7 p.m.

Reservations: J. E. Kelsey, M.D.

1308 Pleasant Street, Des Moines

BENEFIT DANCE

"Caduceus Capers"

Grand Ballroom—Hotel Fort Des Moines

8:30 p.m.

Don Hoy's Orchestra

PAST PRESIDENTS' DINNER

Third Floor, Hotel Fort Des Moines—Room 332

Dinner: 7 p.m.

Sponsored by the Woman's Auxiliary for the
Benefit of Its Health Education Loan Fund

ATTENTION ALL ARTISTS!

*You are invited to display your original art and sculpture work
at an*

ART EXHIBIT

sponsored by the Woman's Auxiliary. All IMS members
and their wives are encouraged to participate.

Entries will be received at the

HOTEL FORT DES MOINES

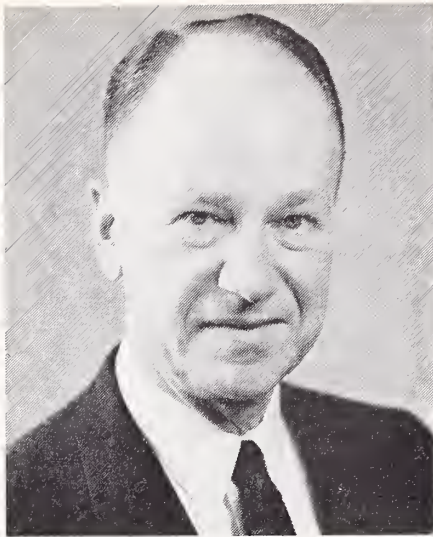
Sunday, April 7

1:30 to 4:30 p.m.

Awards will be made in four general categories:
oils and watercolors; sculpture; drawing; and graphic art.

For entry blanks and information write to:

Mrs. F. M. Burgeson, Exhibit Chairman
1166 Chatauqua Parkway, Des Moines, Iowa



Mr. Robert B. Throckmorton, of Des Moines (left), attorney at law, is legal counsel to the Iowa Medical Society, a member of the American Bar Association and American Law Institute, and a Trustee of Drake University and Wesley Acres. **Robert T. Tidrick, M.D., of Iowa City (right)**, is professor and head of the Department of Surgery at the SUI College of Medicine, is a fellow of the American College of Surgeons, and is a member of the Society of University Surgeons, of the Central Surgical Association, of the American Surgical Association, and of the Western Surgical Association.

The House of Delegates

Open to All Members

SPEAKER

**First Meeting—Sunday
April 7, 10:00 a.m.**

*Wedgewood Room
Hotel Fort Des Moines*

Roll Call

Approval of the Minutes of the Meeting held on May 16, 1962

Reports of Officers

Reports of Committee Chairmen

Memorials and Communications

New Business



L. J. Halpin, M.D.

**Second Meeting—Wednesday
April 10, 8:00 a.m.**

*Grand Ballroom
Hotel Savery*

Roll Call

Reading of Minutes

Election of Officers

Reports of Committees

Unfinished Business

New Business

Adjournment

Program Committee



*T. D. Throckmorton,
M.D., Chairman*



*J. B. Priestley,
M.D.*



J. M. Rhodes, M.D.



C. W. Seibert, M.D.



*Herman J. Smith,
M.D.*

“WHAT TIME OF DAY IS IT IN THE WELFARE STATE?”

Panel Discussion

12:15 p.m.—Monday, April 8

Wedgewood Room—Hotel Fort Des Moines

A dutch-treat reservation luncheon will be served in conjunction with this program, and because of limited space, reservations will be accepted on a first come-first serve basis. Details will be provided at a later date.

Plan Now to Attend

THE ERSKINE MEMORIAL LECTURE

General Session

Open to All Members

12 O’Clock Noon—Tuesday, April 9

Grand Ballroom—Hotel Fort Des Moines

Panel Discussion

“CANCER OF THE BREAST”

Arrangements will be made for a dutch-treat luncheon in conjunction with this program. Details concerning luncheon service will be provided at a future date.

AN EVENING OF ENTERTAINMENT

Tuesday, April 9—Hotel Fort Des Moines

Buy a Banquet Ticket and Attend

THE PRESIDENT'S RECEPTION

6 p.m.—Wedgewood Room

(Blue Shield is arranging the reception in honor of G. H. Scanlon, M.D., IMS President)

THE ANNUAL BANQUET

7 p.m.—Grand Ballroom

Tickets Will Be Sold at the Registration Desk, Hotel Fort Des Moines

Banquet Speaker

EARL NIGHTINGALE

Mr. Nightingale is considered one of the nation's leading authorities in the field of human motivation. He presently writes, produces and narrates his syndicated radio series "OUR CHANGING WORLD" which is heard daily in cities and towns from coast-to-coast.



Mr. Nightingale

PLAN TO ATTEND THE "CADUCEUS CAPERS"

Benefit Dance
for the

WOMAN'S AUXILIARY HEALTH EDUCATIONAL LOAN FUND
Don Hoy's Orchestra
8:30-12:00

Social Evening Expense Courtesy of
Standard Medical and Surgical Company

Tickets will be sold at the Registration Desk, Hotel Fort Des Moines

SCIENTIFIC EXHIBITS

State University of Iowa College of Medicine

PARACERVICAL BLOCK ANESTHESIA IN OBSTETRICS—
R. M. Pitkin, M.D., and Charles A. White, M.D.,
Department of Obstetrics and Gynecology

GERIATRIC PSYCHIATRY—Department of Psychiatry,
Psychopathic Hospital

SUI MEDICAL ALUMNI PRACTICING IN IOWA and
POSTGRADUATE MEDICAL EDUCATION AT SUI—Rob-
ert C. Hardin, M.D., Dean, College of Medicine

Veterans Administration Hospital, Iowa City

CERTAIN APPLICATIONS OF LAMINOGRAPHY—Julius G.
Baron, M.D., and William I. Evans, M.D., Radiol-
ogy Service

CLINICAL ELECTROMYOGRAPHY—David M. Paul, M.D.,
Physical Medicine Rehabilitation Service; and
Robert Jebsen, M.D., St. Luke's Methodist Hos-
pital, Cedar Rapids

Veterans Administration Center, Des Moines

ANTRECTOMY WITH VAGECTOMY FOR CHRONIC DUO-
DENAL ULCER—Louis T. Palumbo, M.D., Wendell
S. Sharpe, M.D., and Donald J. Lulu, M.D.,
Surgical Service

EFFECTIVE ILLUSTRATIONS FOR THE ORAL PAPER—
Medical Illustration Service

General

SALMONELLA OUTBREAK—Iowa State Department of
Health, Division of Preventable Diseases

SYPHILIS IS WHERE YOU FIND IT—Iowa State De-
partment of Health, Division of Venereal Dis-
ease Control, in cooperation with U. S. Public
Health Service, Communicable Disease Center,
Atlanta, Georgia

CIVIL DEFENSE EMERGENCY HOSPITAL PROGRAM—
Iowa State Department of Health, Division of
Health Mobilization

NUTRITION SERVICE OFFERS AN EDUCATION PROGRAM
—Iowa State Department of Health, Nutrition
Service

INFANT IMMUNIZATION STUDY—Des Moines-Polk
County Health Department

DOCTOR, IS A LAYMAN YOUR CONSULTANT IN LAB-
ORATORY MEDICINE?—Iowa Association of Pathol-
ogists

IOWA CHAPTER OF THE AMERICAN ACADEMY OF GEN-
ERAL PRACTICE

GUTHRIE BACTERIAL INHIBITION ASSAY IN THE DE-
TECTION OF PHENYLKETONURIA—Iowa Society of
Medical Technologists

DEMONSTRATING UNUSUAL LESIONS OF THE GALL-
BLADDER—Iowa Society of X-Ray Technicians

IOWA ASSOCIATION OF MEDICAL ASSISTANTS

BREATHING EXERCISES FOR ASTHMA AND EMPHYSEMA
—Iowa Chapter, American Physical Therapy
Association

ARTHRITIS—Iowa Chapter Arthritis & Rheumatism
Foundation

AMERICAN CANCER SOCIETY, IOWA DIVISION, INC.

IOWA THORACIC SOCIETY

FINDING ADOPTIVE PARENTS—WHAT ARE WE LOOK-
ING FOR?—Iowa Children's Home Society

SERVING THE DOCTOR AND THE PUBLIC—Polk County
Medical Society

AUTOMOTIVE CRASH INJURY RESEARCH—Cornell
Aeronautical Laboratory, Inc., Cornell Univer-
sity

AMPLIFICATION—HELP FOR SOME WITH HEARING
LOSS—Des Moines Hearing and Speech Center

DIETITIANS ARE EDUCATORS—Iowa Dietetic Associa-
tion

TECHNICAL EXHIBITORS

- Abbott Laboratories, North Chicago, Illinois
Ayerst Laboratories, Chicago, Illinois
Blue Cross-Blue Shield Plans, Des Moines-Sioux City
Breon Laboratories Inc., New York, New York
Carnation Company, Los Angeles, California
Central Medical & Surgical, Inc., Des Moines, Iowa
CIBA Pharmaceutical Company, Summit, New Jersey
Continental Medical Electronics, Hinsdale, Illinois
Cusack-Harmon Company, Sioux City, Iowa
Desitin Chemical Co., Inc., Providence, Rhode Island
Dictaphone Corporation, New York, New York
Endo Laboratories Inc., Richmond Hill, New York
Marshall Erdman & Associates, Inc., Madison, Wisconsin
Fuller Pharmaceutical Company, Minneapolis, Minnesota
Geigy Pharmaceuticals, Yonkers, New York
Hammer X-Ray Corporation, Des Moines, Iowa
Holland-Rantos Company, Inc., New York, New York
Iowa Pepsi-Cola Bottlers Association, Des Moines, Iowa
Lazy M Shoe Stores, Des Moines, Iowa
Lederle Laboratories, Pearl River, New York
Eli Lilly and Company, Indianapolis, Indiana
J. B. Lippincott Company, Philadelphia, Pennsylvania
Lloyd Brothers, Inc., Cincinnati, Ohio
Loma Linda Food Company, Arlington, California
Mead Johnson Laboratories, Evansville, Indiana
Medco Products Company, Inc., Tulsa, Oklahoma
The Medical Protective Company, Fort Wayne, Indiana
Merck Sharp & Dohme, Chicago, Illinois
The Wm. S. Merrell Company, Cincinnati, Ohio
Northwestern Bell Telephone Company, Des Moines, Iowa
Organon Inc., West Orange, New Jersey
Ortho Pharmaceutical Corporation, Raritan, New Jersey
Parke, Davis & Company, Detroit, Michigan
Pfizer Laboratories, New York, New York
Physicians and Hospitals Supply Company, Minneapolis, Minnesota
Physicians & Surgeons Underwriters Corporation, Minneapolis, Minnesota
Picker X-Ray, Midwest, Inc., Omaha, Nebraska
Professional Management Midwest, Waterloo, Iowa
The Prouty Company, Des Moines, Iowa
Riker Laboratories, Inc., Northridge, California
A. H. Robins Company, Inc., Richmond, Virginia
Roche Laboratories, Nutley, New Jersey
J. B. Roerig and Company, New York, New York
Sandoz Pharmaceuticals, Hanover, New Jersey
W. B. Saunders Company, Philadelphia, Pennsylvania
Schering Corporation, Union, New Jersey
Julius Schmid, Inc., New York, New York
G. D. Searle & Company, Chicago, Illinois
E. R. Squibb & Sons, New York, New York
Standard Medical & Surgical Company, Des Moines, Iowa
Thermo-Fax Dealers of Iowa, Des Moines, Iowa
Thermolyne Corporation, Dubuque, Iowa
Ulmer Pharmacal Company, Minneapolis, Minnesota
The Upjohn Company, Kalamazoo, Michigan
U. S. Vitamin & Pharmaceutical Corporation, New York, New York
Warner-Chilcott Laboratories, Morris Plains, New Jersey
The Warren-Teed Products Company, Columbus, Ohio
Westwood Pharmaceuticals, Buffalo, New York
Whyllie-Farrell, Inc., Des Moines, Iowa
Winthrop Laboratories, New York, New York



Scientific Articles

Frequently-Missed Medical Diagnoses

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Sioux City

IN THESE DAYS of soaring hospital costs and of radical and sometimes magical therapies for many diseases, it is more than ever important for us to know as specifically and as quickly as possible just what is wrong with a patient. Often the exact etiology of a given condition is not thoroughly appreciated, and the treatment is inappropriate. Many times, diagnoses are completely overlooked, to the detriment both of the patient's health and of his pocketbook. These mistakes are sometimes embarrassing, but often more than just embarrassment is involved.

There are many diseases which are easily misdiagnosed. I write from the standpoint of an internist, most of whose patients have been referred by other doctors. I have considered patients whose diagnoses I have missed myself, on first examination, as well as patients sent to me by other physicians with diagnoses either markedly in error or lacking entirely. I might add parenthetically that the general diagnostic abilities of referring physicians appear to be improving as time goes on, and that fewer and fewer obvious diagnoses are being missed. This is occurring, I think, partly because more diagnostic technics, laboratory studies, etc., are being used by attending physicians generally, and also because educational programs are becoming more widely available, and physicians in general are becoming more and more aware of certain causes of illness.

FOUR REASONS FOR MISSING DIAGNOSES

There are four reasons why diagnoses—particularly medical diagnoses—are missed. The most obvious reason is that sometimes the doctor simply does not have time, or does not take time, to go over the story—the history of the illness—which the patient brings him, and to do the physical examination and laboratory studies that are indicated. We are all busy, and occasionally in the press of daily work, we simply brush aside some significant complaints. This does not occur as frequently as one might think, however.

The second reason why diagnoses are overlooked is our assumption, fostered by our training in medical schools and postgraduate institutions, that all of the complaints that a patient has at a given time are due to only one disease. I am told that a favorite question of examiners in the surgical specialty is, "Where is the most dangerous place for acute appendicitis to develop?" The correct answer of course is, "In a hospital, when a patient is sick with something else." From time to time, a patient who is in the hospital with an acute myocardial infarction will also have a duodenal ulcer; we all have seen this happen. Occasionally one sees a woman who has persistent nausea, vomiting and epigastric pain, and in whom x-rays confirm the clinical suspicion of an active duodenal ulcer. Treatment for the ulcer does not alleviate her troubles significantly, and only later does one realize that the girl is also pregnant. This is, of course, embarrassing to the physician as well as to the patient.

The other two reasons why diagnoses are missed are probably both the most important and the commonest. Many times only a partial diagnosis is made, and the basic cause of a given condition is not looked for. Thus a middle-aged man com-

Dr. Larimer made this presentation in Fort Dodge at a medical conference sponsored by the Iowa Medical Society and the Webster County Medical Society.

plaining of fatigue, shortness of breath and palpitation may be anemic, and we may treat him for the anemia without giving any particular consideration to the question of why he became anemic in the first place. There are many sites in the gastrointestinal tract, for example, from which bleeding can be of sufficient volume to produce a marked iron deficiency. Occasional ulcers will not cause any particular discomfort or distress, and it is a common observation that the ulcers that bleed don't hurt, and the ones that hurt don't bleed. Malignancies of the stomach, of the small bowel and of the cecum can bleed without producing early symptoms. Consequently, it is important that a stool examination for blood be done on every patient with an anemia, the cause for which is not otherwise fairly obvious. Likewise, a low grade uremia is a common cause of a hypoplastic anemia and, if not a BUN determination, at least a urinalysis should be done as a part of the study of such a patient. An anemia need not be secondary to G. I. bleeding. A small percentage of patients will demonstrate hemolytic mechanisms of low enough degree so as not to cause jaundice; a hemolytic anemia is occasionally the presenting sign of Hodgkin's disease or lymphosarcoma, particularly if the condition happens to involve the spleen before involving peripheral nodes. Hemolytic mechanisms of this sort are usually demonstrable by suitable laboratory procedures, but these tests are somewhat complex and difficult to perform in the office. However, a simple examination of the blood smear, particularly if supravital staining is used to demonstrate reticulocytes, will usually show whether or not further study is indicated. It seems almost superfluous to suggest that the cells themselves should be looked at if the red or white blood cell count is abnormal, but many times this obvious step is not taken and the cause of the anemia is not found.

Another blood dyscrasia frequently overlooked is pernicious anemia. Until about 10 years ago, liver extract and B-12 injections were the only treatment for this disease, and before a patient was committed to a lifetime of injections, the diagnosis in most instances was made fairly definitely. However, with the development of oral B-12 preparations which could be absorbed by patients lacking intrinsic factor, and with the incorporation of these preparations in shotgun medications, the necessity for exact diagnosis was lost, since pills are easier to take than shots. For this reason, we tend not to remember pernicious anemia. The patient who presents himself with weakness, paresthesias or a sore tongue may not even have anemia, since the neurologic damage may precede any specific indications of the true disease. There are adequate tests for the presence of acid in the stomach which do not involve the bother and nuisance of gastric intubation. These

are easy to use in the office, and they should be used. Shotgun hematinic preparations are no substitute for diagnosis.

THE PATIENT'S COMPLAINTS MUST BE TAKEN SERIOUSLY

Most people regard it as very difficult and embarrassing to consult a physician unless a catastrophic illness has occurred. As doctors, we tend to forget this attitude, and we miss diagnoses because we persist in thinking that many of the people who seek our help are "not really sick" or are "just neurotic." Perhaps the easiest diseases to miss are those with symptoms so mild as to be overlooked, or so indefinite as to be ascribed to some other cause. An example would be a young mother who has just had her third baby, who has no help in the home, and who complains, two or three months after delivery, of fatigue and "just aching all over." Physicians are too likely to assume that the girl is obviously exhausted from looking after two older children as well as a new baby, and that she is probably somewhat depressed after having been pregnant, since most girls are. It is easy for us to forget that she may actually have a mild rheumatoid arthritis without joint symptoms. The important thing for us to bear in mind is that fatigue and depression do not cause fever or an elevation of the sedimentation rate. An active inflammatory process, however, will do so.

One occasionally sees a child in the fourth or fifth grade who simply will not sit still. The child is otherwise well, but does badly in school, makes his parents angry over his inattention and jittery behavior at home, and is thought of as being a very naughty child. Many of these children are simply naughty, but some of them have undiagnosed Sydenham's chorea.

Lupus erythematosus has a way of initially mimicking something else, most of the time, and can be mistakenly diagnosed for many years as a fatigue state, arthralgia or arthritis, a hemolytic diathesis, a digestive disturbance, "habitual abortion" or some other similar poorly-defined condition, before it becomes evident that the patient has actually had lupus all along. The diagnosis has become much easier to establish since the discovery that under suitable circumstances leukocytes will phagocytose the patient's own DNA, and this phenomenon can be observed under the microscope. The technic is not suitable for routine screening in the usual office laboratory, but it can usually be done in a hospital and should be one of the routine procedures employed in the laboratory investigation of vague illness.

WE SHOULD BE CONSTANTLY WATCHFUL FOR CERTAIN DISEASES

It is worthwhile to consider how easily mistakes in diagnosis can be made in certain specific situations. Pulmonary disease in its late stages is

hardly ever overlooked. Early lung cancer or early tuberculosis, however, may not make the patient sick enough to necessitate a chest x-ray, and cough, weight loss and night sweats do not appear as early signs. The patient may simply be tired, have no pep, and act depressed, and thus the actual disease process in the lung may be overlooked. Very commonly, when lung disease—bronchopneumonia, for example—is looked for and found, the etiology is not actually determined. It is important to remember that the various antibiotics may have broad, narrow or sometimes overlapping spectrums. Generally, antibiotics attack germs and not patients, and we can find the most suitable antibiotic only by knowing what organism we are dealing with. Even if cultures and tests to determine the sensitivity of the offending organism are not available, a simple Gram stain of the sputum or nasal or throat exudate may provide a valuable clue as to the organism and the appropriate antibiotic.

Certain diseases are enzootic in Iowa and should be of special interest to Iowa physicians. In spite of the general awareness of these diseases, however, and the educational efforts of the State University of Iowa, many of these diseases are overlooked by busy practitioners. I am thinking particularly of chronic brucellosis and leptospirosis. People are often not very sick with these diseases, and the low grade fever, the general aches and pains, and the prostration that they cause are often ascribed to "influenza" or "a virus." Serologic tests are being routinely done at the University for these diseases, and the results are much more commonly positive than are those for syphilis. Besides the obvious implications of illness, these two diseases have the public health and economic implications of infected herds of animals. It is not very unusual to see a patient with brucellosis who has not realized he had a sick animal, and the physician has to consult with the veterinarian, as well as to provide appropriate antibiotic therapy for the patient.

Amebic infestation with or without dysentery has been endemic in this area for nearly 30 years, but it is rarely diagnosed. Again, patients with this condition may not have been sick enough to call attention to their troubles. The ulcerative colitis resulting from large-bowel infection may be called "idiopathic" because amoebae were not looked for at the time of sigmoidoscopy.

It is perhaps fortunate that histoplasmosis is most commonly a benign, self-limited disease, since it is so rarely diagnosed in an acute stage. We see many people from certain areas whose chest x-rays show the typical scattered miliary calcifications of burned-out histoplasmosis, and whose skin tests are positive. They must have had acute histoplasmosis at one time, but virutally none of the many people in this condition whom I have asked remember having had any major pul-

monary illness at any time in the past. Acute histoplasmosis exists, and should be looked for not only because of its obvious implications for the patient but because, again, the public health and economic aspects of its spread among poultry flocks is important.

Another disease which I am sure is frequently overlooked is chronic pyelonephritis. There may not be fever or flank pain, and in fact, changes in the urine may not be picked up unless quite a number of specimens are tested. The patient will simply feel sick, and the symptoms may suggest, for example, gastrointestinal rather than renal disease. Even an intravenous pyelogram may fail to demonstrate abnormalities. Recent work has shown that a grossly contaminated urine (one with 100,000 or more bacteria per cubic centimeter) is almost always associated with infection of the kidneys, and it has also been demonstrated that catheterization is probably the most frequent cause of this contamination. This is particularly true in pregnancy, in bedfast patients in whom normal bladder function is impaired, and in patients with some degree of obstruction. One must always consider obstruction such as is produced by aberrant blood vessels crossing the lower part of the renal pelvis; kinking of the ureters from endometriosis; and chronic cystitis and trigonitis in older women. In these patients, even if the pyelonephritis is recognized and treated with antibiotics, the chance of a cure is slight since normal drainage is interfered with.

In the field of cardiovascular disease, congestive failure is hardly ever missed, since almost all doctors and many patients are quite aware of the classical features of shortness of breath, edema and cardiac enlargement and irregularity. Pleural effusions due to congestive failure are often missed, however. Many times the cause of congestive failure is overlooked. If the patient has not had high blood pressure, an old coronary, old rheumatic heart disease or congenital heart disease, I think it is imperative to wonder why the heart should have failed, since many of the less frequent causes of congestive failure are potentially curable. I think all of us, for example, have had the experience of seeing a 50-year-old woman whose toxic goiter was removed 30 years ago, who has auricular fibrillation and congestive failure because of persistent low grade overactivity of the remnants of the thyroid gland.

Anemia by itself can produce heart failure, as can uremia. Every so often, we see a patient with obvious congestive symptoms whose disease does not really lie in the heart at all, but in mediastinal nodes, enlarged by lymphoma, the treatment for which would be x-ray rather than digitalis. Likewise, constrictive pericarditis is not as uncommon as one would think, particularly in patients who have had previous coronary thrombosis with

some degree of pericardial involvement. The adherent pericardium, rather than the scarred muscle, may be the cause of subsequent congestive failure.

One need only mention that thrombophlebitis often occurs, even in an ambulatory patient, to remember that it is often overlooked until pulmonary embolization takes place. Even though this is a much more benign disease than coronary thrombosis, patients do die from acute pulmonary infarction. Differentiation between pulmonary and myocardial infarction in a critically ill patient with chest pain, shock and shortness of breath may not be easy, but since the treatment is different in each of these conditions, it is important to know which one the patient has.

High blood pressure should always be thought of primarily as a symptom rather than a disease when the patient first presents himself. More and more conditions, primarily of the kidney, have been demonstrated in recent years to cause hypertension, and the percentage of patients for whom no explanation for high blood pressure can be found is definitely decreasing. When the patient is first seen, a series of urine specimens should be tested for the possibility of pyelonephritis or glomerulonephritis. The pulses in the legs must be felt for, as a screening test for coarctation of the aorta. In a slender person, an aortic aneurysm at the level of the renal arteries is usually easily palpable, and should be looked for. If the hypertension is of recent onset and not easily controlled, a rather intensive search should be made for unilateral renal disease or unilateral renal artery disease.

Chronic depression is another disease which will often cause a moderate hypertension, which is very easily confused with many other conditions and which is probably the most frequently missed of all diseases. It is difficult to tell whether a patient is really sick or simply tired. Mildly elevated blood pressure, "gas," a "spastic colon" and "gastritis" are more often symptoms of depression than of anything else. The patient may just be listless. She may have taken a long time getting over an attack of influenza or a surgical attack, or she may be menopausal, but more often there is no really obvious reason for her depression. In the last three or four years, medications to improve the outlook of a patient with depression have been developed, and if this diagnosis is considered, a therapeutic trial with one of the monamine oxidase inhibitors is often helpful in establishing it. I should like to emphasize that the diagnosis of depression, like that of any other disease, should never be made by exclusion. In the first place, it is unreasonably expensive to perform every known laboratory test and every possible x-ray examination. In the second place, a positive diagnosis of depression can be made easily if one is on the lookout for the

condition, and any disease is much better diagnosed on the basis of positive criteria than because "it simply couldn't be anything else."

Another condition which is frequently missed in older persons is early Parkinson's disease. Many times such people in early middle age are brought to the doctor's office by their children, nephews or nieces for examination simply because something doesn't seem right, in a vague, undefinable way. Many things may be wrong with the patient, including diabetes, arteriosclerosis, congestive failure, and the whole host of other ailments which may be contracted by senior citizens. Unless a frank tremor is present in the face, hands or feet, the characteristic rigid thinking and rigid muscles of Parkinson's disease are easily overlooked. In retrospect, a patient who finally does develop a tremor may have noticed that something was wrong with his thinking and his locomotion three or four years before his hands finally began to shake, and much expense and unpleasantness has been incurred simply because his gradually progressive Parkinsonism has not been recognized.

A DESIRABLE ROUTINE

What steps should one take in an attempt to avoid missing diagnoses? The most obvious first step is to take an adequate history—and by this I do not mean completing a check-list of symptoms, but rather, allowing the patient to outline the history of his illness as it has happened to him. Most adults are fairly sensible and are pretty good observers. Given an opportunity and a sympathetic listener, they are only too happy to provide most of the clues that the physician needs in order to make a diagnosis. The manner in which the story is told is as important as are the facts themselves, and history-taking can be delegated to an interne or to a nurse only at the expense of missing at least 50 per cent of the pertinent data.

The physical examination need not take very long, but it must be thorough. As you know, "A specialist is a doctor who does a rectal examination." Certain simple office-laboratory procedures can be done easily and quickly, and not only should be done routinely on every new patient, but also, from time to time, should be performed on patients whom one has seen quite frequently for years. These should include a hemoglobin, or similar study of red cells; a white blood count; and if the results of either of these has been abnormal, a stained smear of the peripheral blood; a urinalysis; a sedimentation rate; and an examination of the stool for occult blood (an adequate specimen should be on the end of the gloved finger, anyway). These tests are almost basic and, except for determining the sedimentation rate, take very little time. A chest x-ray, an electrocardiogram, a Gram stain of sputum, and a two-hour postprandial blood

sugar may be needed on occasion, and facilities should be available for the performance of these tests. Some laboratory examinations, such as immunologic studies or searches for LE cells or malignant cells in body fluids, are better done in large hospital laboratories where the volume of such work justifies better technicians and more elaborate facilities than are economical for an office laboratory.

The final step is the most important and the most difficult. After all information from the history, examination and laboratory has been synthesized, and a conclusion has been formed, the diagnosis must be questioned constantly. The physician must ask himself both, "Is this the *complete* diagnosis?" and, "Is this the *only* diagnosis?"

CONCLUSION

I have tried very briefly to remind you of some of the diseases which I think are commonly overlooked or missed in diagnostic evaluations of patients. My list has been by no means exhaustive,

and I hope I haven't seemed to be speaking *ex cathedra*. I am sure that other internists in our area would make different lists, and certainly that those practicing in other parts of the country would make more markedly dissimilar ones. Of course internists, themselves, miss many of these things, and certainly I have sometimes overlooked some of the very things that I have mentioned.

I believe that there are four things that all of us must remember to do, if we are to avoid mistakes in diagnosis. (1) We must take time to talk with the patient, and particularly to listen to him. (2) We must examine him carefully and do certain relatively easy, inexpensive laboratory studies. (3) We must make an honest attempt, in every case, to look for the basic cause of the presenting illness. (4) We must make a real search for disease, both organic and psychological, whenever a patient decides to seek our help. If we do all of these things regularly, fewer diagnoses will be overlooked and missed, and all of our patients will get better care.

Infertility and Endocrinology Conference at S.U.I.

The last postgraduate conference of the current series—a one-day session on infertility and endocrinology—will be held in the Medical Amphitheater of University Hospitals on March 27. The conference is sponsored by the Department of Obstetrics and Gynecology. Registration fee for the conference is \$10.00 which includes tickets for the luncheon at Hillcrest Dining Room. Category I credit will be allowed by the Iowa Chapter of the AAGP. Housing and parking accommodations will be arranged on request, and advance registration is urged. Write: John A. Gius, M.D., Director of Postgraduate Medical Studies, College of Medicine, Iowa City, Iowa.

WEDNESDAY, MARCH 27, 1963

8:30 Registration

Chairman: J. P. Jacobs, M.D.

9:00 Welcome

Robert C. Hardin, M.D., Dean, College of Medicine

9:15 Clinical Evaluation of Amenorrhea

J. P. Jacobs, M.D., Assistant Professor, Ob. & Gyn., S.U.I.

10:15 When Are Hormonal Assays of Value?

J. T. Bradbury, Sc.D., Professor, Ob. & Gyn., S.U.I.

11:15 Timing of Ovulation

M. R. Cohen, M.D., Chicago

11:45 Question and Answer Period

Moderator: W. C. Keettel, M.D., Professor & head, Ob. & Gyn., S.U.I.

12:15 Lunch—Hillcrest Dining Room

Chairman: W. C. Keettel, M.D.

1:30 Reproductive Potential of the Male

R. G. Bunge, M.D., Professor, Urology, S.U.I.

2:15 Special Diagnostic Techniques to Evaluate Tubal Function

M. R. Cohen, M.D.

3:15 Discussion of Your Clinical Problems

Emergency Care of the Head-Injury Patient

Or What to Do Before the Neurosurgeon Arrives

PETER V. WESTHAYSEN, M.D.

Hammond, Indiana

IT IS PERHAPS another sign of the changing times in which we live today that a California neurosurgeon recently defined the typical citizen of this country as follows: "An American today is a magnificent-looking physical specimen, with a deep sense of responsibility toward his fellow man, a sense of fair play, a modicum of integrity, a warm and courageous heart, *and a neck encased in a cervical brace.*"

The subject of trauma to the nervous system is a very large one, and in many respects it is very confusing to the medical profession in general. I certainly would only add to the confusion if I were to go too far afield, and I shall therefore limit my comments to a few general aspects of head injury and to the basic principles of emergency care.

To speak of the acutely injured is to discuss the subject of highway accidents. A recent report by the National Safety Council revealed some morbid facts. Automobile accidents are the No. 1 killer of persons in the 15-24 year age bracket, and they are one of the top 10 causes of death for people in all other age groups. For every person killed by the automobile, about 116 are injured. In 1961, more than 38,000 persons were killed in automobile accidents, and about 4.5 million were injured. This toll, I believe, far exceeds the number killed or injured in the bloodiest battles of history, prior to the atomic bomb. The head is injured most frequently, but the greatest number of fatal head injuries are associated with damage also to the neck and cervical spine. Multiple injuries appear to be occurring with a growing frequency, and the commonest multiple injury is a combination of cranio-cerebral damage and injury to the long bones of the extremities. Accidents in rural areas account for about 75 per cent of motor vehicle deaths, and in a relative sense, turnpikes are the safest roads. Alcohol is a factor

in almost 50 per cent of automobile casualties. Other well established factors are the side-effects on the central nervous system of medications such as some of the antibiotics, the antihistamines, ganglion-blocking drugs, amphetamines and sedatives. The possibility of road accidents related to the use of insulin has long been recognized, of course.

THE GENERAL FAULTS OF EMERGENCY CARE

What should disturb all physicians is the evidence that emergency care for highway accident patients is frequently inadequate, either because proper facilities are not immediately available in the hospitals to which they are brought, or because the doctors who see them first don't give them enough or the right sort of attention. These statements constitute a serious indictment of the medical profession, and my own experience and observations have convinced me that the people who manage hospitals deserve a share of the blame.

The emergency rooms of many hospitals are seriously in need of procedures that will facilitate better teamwork for the physicians who attend the acutely injured. An improvement of this sort would seem only logical, since industrial and road accidents today are responsible for filling a high percentage of beds in most hospitals. The truths that we physicians were forced to learn under wartime conditions are being neglected, chiefly because of the development of extreme medical specialization during the last few years. In some instances the fault lies with the individual physician, but the basic cause has been the unrealistic and artificial partitions that have been erected between general surgery and the surgical specialties, both in medical schools and in hospitals.

To divide the human body, by regulation or custom, so that several telephone numbers must be called whenever a person has been hurt is not in the best interests of the patient. Admittedly, there is a distinction between emergency care and definitive care, but emergency care is the personal responsibility of every physician, regardless of whether he is a hospital interne or a medical specialist. Good care of accident cases calls for the application of the fundamental medical

Dr. Westhaysen made this presentation at the regional meeting of the International College of Surgeons, in Des Moines, last fall.

principles which dictate that the patient as a whole must be treated first. The rating of an emergency-room doctor does not depend upon specialty certification, but upon keen interest, and upon common sense and the ability to use it.

Not infrequently, the relative neglect and dangerous delays incident to hospital procedures nullify the life-saving first-aid measures which have been promptly administered by members of police or fire departments, by ambulance attendants or by others at the scene of the accident. If the patient survives the trials of passing through the admitting office, he is often shunted to the x-ray room to await his turn, instead of receiving the necessary preliminary examination that would reveal what his emergency needs are. Too often, a nurse is ordered to "clean him up, start an intravenous and send him to x-ray." The nurse, though she is a willing instrument of the doctor, is unqualified to carry out important details of emergency care. Time after time, I have learned that even the simple task of clearing the patient's airway effectively cannot be delegated to a nurse, unless she has been specially trained for it. The present tendency of some physicians to relegate special treatment procedures to a willing nurse often amounts to no more than "going through certain motions," from which the patient derives no benefit and which may even contribute to his demise. It is also sad to note that this lamentable practice is promptly copied by internes and residents, who are just beginning their medical careers.

In the management of trauma to the nervous system, I want to emphasize that although the immediate or emergency care of injuries to the brain and spinal cord may differ in certain details from injuries to other parts of the body, the basic principles are the same. It is in the subsequent care—in the early definitive care—that the services of the neurosurgeon become necessary.

The three most commonly lethal factors in patients with injuries to the head are asphyxia, hemorrhage and shock. These must be recognized and treated at once, by any physician who happens to be available, and in exactly the same manner that he would treat such conditions in a case of serious injury to any other part of the body.

ASPHYXIA

In the past, persons with severe head injuries were often considered doomed if a neurosurgeon were not available to "open the head." Today, many of these victims can be saved if a general physician "opens the neck." He performs a tracheostomy. There can be no question that the failure to recognize and relieve a respiratory obstruction or asphyxia is the most frequent cause of preventable death in cases of head injury. Many of those who survive this neglect may be unnecessarily crippled by permanent brain damage from the

prolonged anoxia that went unrecognized—or at least uncorrected—after his arrival at the hospital.

In severe head injury, the breathing difficulty may be of central origin—i.e., due directly to a disturbance of the respiratory center in the brain stem—but the mechanical causes of asphyxia such as quantities of blood or saliva, a broken jaw or a lacerated tongue usually contribute as much to the respiratory obstruction, and the administration of oxygen by any means is useless if the patient cannot breathe. Therefore, the first rule is that every unconscious head-injury patient should immediately be postured partly on his side, in a semi face-down position, to allow for external drainage of blood and saliva. He should be transported in this position, and should also be nursed in this position after his admission to the hospital. If the simpler measures of posturing, aspiration and insertion of a rubber airway do not correct the respiratory distress, a tracheostomy should be done without further delay. The time to do a tracheostomy is when one first thinks of it. Very often, there is an immediate and dramatic change in the patient's condition when the trachea is opened, and some of the serious effects of head injury may actually disappear. It cannot be emphasized strongly enough that every doctor, no matter what his specialty or interest, should be able and should have the requisite courage to perform a tracheostomy when it becomes a life-saving procedure. Concern over a wound or scar in the neck is of minor importance, for it will heal in a live patient.

HEMORRHAGE

The difference between bleeding and hemorrhage is purely academic. The treatment is the same for both conditions: the flow of blood must be stopped. Serious blood loss may occur from other wounds associated with the head injury, but everyone knows how copiously a simple scalp laceration can bleed, and complete exsanguination can occur from a deep and extensive scalp laceration alone. From time to time, one comes across an emergency-room doctor with the peculiar and inexplicable attitude of "Hands off, until the neurosurgeon gets here." He will stand by while bleeding continues from the patient's head, scalp and face wounds. The neurosurgeon, when he arrives, is confronted in such instances by the gruesome picture of a man lying on his back, his head and face covered by partially clotted blood, and with every respiration, blood is gurgling through his nose and mouth into an overlying oxygen mask.

It is enough to say that the added anoxia, plus the added shock from unchecked blood loss, can tip the scales against the accident victim whose head injury would otherwise be completely reversible.

SHOCK

Head injury *per se* does not produce serious traumatic shock, but the associated body and extremity injuries may do so, and the presence of a serious head injury is no excuse for delay in the prompt splinting or other fixation of major extremity fractures. Sometimes a person with a compound depressed skull fracture may be fully conscious, and the relief of pain from multiple associated injuries is then a very important aspect of management. In other words, in the head-injury patient, all causes of impending shock should be recognized and promptly corrected. Because of the effect of the head injury upon the brain-stem regulating centers, the pulse and blood pressure changes may not always follow the usual shock pattern, but the overall traumatic picture of shock will still be obvious.

SKULL X-RAYS

Two questions are often asked, "When should one x-ray the head?" and "How much of an emergency measure is it?" All head-injury patients should have skull films taken sooner or later, but the x-rays are never truly an emergency requirement. When one suspects a compound depressed fracture with brain penetration, he would like to have x-ray information as soon as possible. The films will serve as a guide to whether there are indriven bone fragments, what their position is, and so on, but the confirmation of a compound depressed fracture can also be achieved by exploring the wound with a gloved finger. A non-compounded depressed fracture need not be x-rayed on an emergency basis. The films can wait until more urgent matters have been attended to, or until the patient's condition has stabilized. There is never a justification for routine skull x-rays while the patient still needs resuscitatory treatment.

How does one gauge the course of a head injury? The level of consciousness is the primary yardstick to use in following the course in such cases. It should be carefully noted and recorded when the patient is first seen. A person who is regaining consciousness is not developing an intracranial complication. On the other hand, if consciousness is decreasing, the patient certainly is growing worse. The level of consciousness is what counts in a head injury, rather than the pulse, the temperature and the respirations which everyone seems to emphasize. Of course the vital signs do provide added information and should be charted, but they should not be relied upon. One should be interested in the regularity of the respirations and in the pulse rate, as well as in the stability of the blood pressure. There is a well established pattern that follows increased intracranial pressure. This consists of a rise in the blood pressure and a slowing of the pulse. However, the absence of these

signs should not lead one to disregard the possibility of an intracranial expanding lesion, such as a blood clot, when there is failing consciousness or deepening coma.

As a rule, either persisting hyperthermia or a very subnormal temperature should be regarded as a bad sign in a head-injury case. Either one is an indication that the temperature-regulating mechanism in the brain stem has been seriously disturbed and that there has been severe brain damage.

CONCLUSION

In closing, I shall repeat my premise: the care of the patient with serious injury to the head requires a team effort from the doctor who first sees him and the neurosurgeon. Prompt and effective emergency care for the acutely injured is the professional obligation of every physician, regardless of his specialty or field of interest. The importance of what a physician accomplishes does not hinge upon how far he goes in the care of the accident victim, but on *how well* he does his part of the job. The physician who is willing to educate himself in the essential phases of emergency care of accident victims, and who conscientiously applies his knowledge, is as true a specialist as are the members of the most erudite specialty societies.

The Physicians Placement Bureau has had a request for a locum tenens location from a young physician who will complete his internship in June, and who wishes some practical experience while awaiting his call to military service. If you are yearning for a summer vacation and feel that an arrangement of this sort might expedite your planning, please let us know.

There may be other inquiries of this nature, and we should be happy to serve as a liaison between our readers and young physicians seeking locum tenens opportunities. Write Physicians Placement Bureau, Iowa Medical Society, 529-36th Street, Des Moines 12, Iowa.

Irradiation Proctitis

JAMES F. BISHOP, M.D.

Davenport

EXCEPT FOR SOME scattered opinions to the contrary, the most widely accepted treatment for cancer of the cervix is irradiation by x-ray and radium. It is not the purpose here to consider the effect of such treatment upon the primary lesion, but rather to reflect upon some of the unwanted but unavoidable concomitants. Applied as it is, in close proximity to the neoplasm, the radium emits its rays impartially in all directions, and the radiotherapists' attempts at protective shielding often are only partially successful. Inevitably, upon occasion, damage is inflicted upon neighboring tissues, and the rectum is a frequent victim. The bladder, too, sometimes displays evidence of rather severe trauma, but in general it seems to suffer far less than does the distal large bowel.

INCIDENCE

The incidence of significant rectal injury following irradiation of cervical cancer seems to approximate 10 per cent of the cases treated, according to the personal views of our hospital radiologist. The fact that the other 90 per cent of patients suffer no significant bowel damage provides the radiotherapists with material for speculation as to individual differences in resistance to constant doses of emanations.

The opinions and observations expressed hereafter are based upon experience with 25 cases of irradiation proctitis. Each of these women had symptoms sufficiently distressing so that her radiologist, gynecologist, or family doctor felt she needed specialized care.

PATHOLOGY

As described by our hospital pathologist, the histopathology of irradiation proctitis presents varying degrees of damage to the rectal epithelium. With severe injury, outright cell-death may occur, whereas with lesser involvement, there are irregular areas of ulceration and a definite lag in the healing process. There are varying degrees of fibrosis and thickening of collagen and muscle fibers, which often result in loss of elasticity of the rectal wall, along with fixation of the mucosa to the underlying scar tissue and muscle.

Gross pathology, too, presents a variable picture. There may be only slight thickening and injection of the mucosa on the anterior rectal wall, with scattered areas of friability that ooze only slightly. The process may range from such minimal damage through worsening degrees of involvement, and on to awesome and almost unbelievable destruction and distortion of bowel tissue. There may be recto-vaginal fistulae of varying sizes, or fistulae between the recto-sigmoid and the vagina. The rectal wall may be scarred, shrunk, and more rigid than in the so-called "leadpipe narrowing" of ulcerative colitis. There may be a constricting band in the mid-rectum which so narrows the lumen as to produce obstruction. A hard, unyielding mass of ulcerated scar in the lower sigmoid or recto-sigmoid sometimes obstructs and perforates. As an aside, I might mention a recent article reporting a significant number of irradiation-treated cancers of the cervix. The authors, commenting upon instances of such fistula or perforation, stated that the great majority were due to recurrent tumor. In this modest series of twenty-five women, six had perforations from the bowel. In five, there was neither gross nor microscopic evidence of recurrent neoplasm.

SYMPTOMS

The gastro-intestinal symptoms incident to irradiation treatment of cancer of the cervix can readily be divided into those occurring during treatment and those appearing later.

Diarrhea of varying severity is common, along with occasional nausea during the period of x-ray treatment. These symptoms subside rather promptly when the x-ray is discontinued.

The symptoms of irradiation proctitis appear later. In one instance, they almost seemed to blend with the diarrhea of the x-ray therapy. A few patients experienced first symptoms three to four months after the completion of their treatments, but the largest group noticed the onset of their difficulties from six to nine months after treatment. Others had an even longer interval of a year or two, and three of the women had no symptoms until between three and five years later.

The symptoms vary with the severity of the involvement. With minimal irradiation reaction, there is the passage of small amounts of blood and mucus, and perhaps a slight increase in the number of stools. More marked bowel damage brings more pronounced symptoms, with increased

passage of blood and bloody mucus. Tenesmus—slight and only a minor annoyance when the involvement is mild—increases with the severity of the damage until it becomes a constant and unremitting torment. The rectum, with its edematous, bleeding, damaged wall, is highly irritable and intolerant to the slightest accumulation of its own secretions. It constantly demands evacuation of the steadily oozing products of its inflammation. The passage of stool, no matter how soft, compounds the distress until the patient has little or no rest, day or night. The unrelenting and prolonged torture becomes well-nigh intolerable, and may result in a severe disorganization of the patient's personality.

Perforation between the bowel and the genital tract results in the passage of gas and stool from the vagina. Where partial or complete obstruction of the bowel appears, the symptoms are those of obstruction from any cause.

PROCTOSCOPIC FINDINGS

Where the irradiation proctitis is mild, it is limited to the anterior rectal wall at the level of the cervix, where there are pallor of the mucosa, telangiectases, edema and friability, with scattered areas of oozing granulations. With more severe damage, the mucosal reaction is more pronounced, and there are extensive bleeding granulations, greater edema and scarring, and involvement of a greater portion of the bowel circumference. On the anterior wall, there may appear an area of ulceration, rather poorly defined at first. After a time, this is likely to form a well-demarcated necrotic plaque, with a grayish center and with granulations piling up about its borders. This is the most common site of recto-vaginal fistula when slough through the septum becomes complete. Here, of course, the suspicion of recurrent cancer is raised, and the temptation to biopsy is great. This temptation must be resisted, however, for the resulting wound is very slow to heal and may even produce a fistula which otherwise might not have occurred.

As the acute stage subsides and the scarring in the wall progresses, the proctoscope may reveal constriction of the mid-rectum, producing varying degrees of obstruction. The muscle wall itself becomes shrunken and narrowed, losing its elasticity almost entirely.

Proctoscopy, especially during the acute stage, can be an extremely painful procedure, and it must be done with the utmost care and gentleness. Once the diagnosis has been established, examinations should be done only infrequently, for the information gained is seldom worth the distress inflicted. The symptoms themselves provide a good guide as to the results of treatment.

COURSE

The course of the disease is likely to be prolonged over months and sometimes years. Mild to moderate degrees of involvement will eventually heal, the distress will subside, and the bowel will return to normal function. With severe damage, the rectum is likely to be permanently scarred, shrunken and useless, and any recto-vaginal fistula probably will persist. Then there are patients whose courses are shorter, terminated finally by recurrences of their cancers.

TREATMENT

When symptoms and damage are mild, no treatment is necessary beyond aspirin as needed, warm baths, and reassurance that eventually the process will heal.

Where rectal bleeding and tenesmus are troublesome and the bowel damage is not excessive, oral steroids are of great value. Prednisone was used in a number of these cases, beginning with 5 mg. every six hours, and increasing or decreasing the dosage in accordance with the response. As improvement occurred, the minimum maintenance dosage was sought, and when it was found it sometimes had to be continued for months. One patient, for example, needed 5 mg. daily or on alternate days for two years, to prevent a recurrence of bleeding. Afterward, her lesion was adjudged cured and her treatment was discontinued.

Rectal instillation of various therapeutic substances has been recommended. Steroid suppositories, warm oil, solutions of hydrocortisone, local anesthetics, and corn starch—all as retention medications—were tried and abandoned. The added volume of material was intolerable and demanded immediate expulsion. In each instance, the patient complained that her distress and tenesmus were increased. Oral prednisone, along with non-narcotic pain relief and warm Sitz baths, seemed most effective.

In some cases, however, the damage was so great that conservative measures were inadequate and prednisone was ineffective. The distress was so agonizing that surgical relief was necessary. When the lesion was limited to the rectum, sigmoidal colostomy was the procedure of choice. To simplify care of the colostomy stoma, the distal divided end of the bowel usually was closed and returned to the abdomen. When rectal injury is severe enough to require colostomy, it is likely that the artificial anus will be permanent. It seems a forlorn hope that the rectal segment will ever recover sufficiently to be useful in the restoration of bowel continuity. It is worthy of note that although a permanent colostomy is most objectionable under other circumstances, it is welcome relief from unremitting torture in cases of severe irradiation proctitis.

With obstruction and/or perforation in the lower

sigmoid, colostomy, followed by segmental resection and anastomosis, is a logical procedure. Attempts at restorative and reconstructive surgery must be approached with great caution, however, for the healing capabilities of these tissues may have been greatly impaired. An elaborately planned and executed repair of, for example, a recto-vaginal fistula may very well founder and confront the dismayed surgeon with a mass of granulating and ununited tissues. The outcome of sigmoidal anastomosis is likely to be more gratifying, but even when one undertakes a procedure of that sort, he should carefully inspect the ends that are to be joined. If there is doubt as to their vigor, a proximal diverting colostomy is prudent.

When confronted with such distress and tissue destruction, one may be reminded of the ancient cliché, "The cure may be worse than the disease," especially since permanent colostomy may result. Therapy for cancer of the cervix must be pursued vigorously and relentlessly, and if permanent colostomy is necessary, now and then, it must be accepted. Such a possibility cannot be cited as an excuse for diminishing the vigor of the treatment. After all, permanent colostomy has long been acknowledged as a reasonable price for an adequate attack upon cancer of the lower rectum.

The treatment of irradiation proctitis must go beyond medical and surgical attempts at its alleviation. A complete understanding of the situation

by the patient and her family is imperative. At times one encounters resentment directed against the radiotherapist, on the grounds that he has produced "x-ray burns." The patient must be made aware that the distressing complications of her treatment have been no one's fault. She must understand that her disease was a radical one, and that only militant, radical treatment could help her survive.

SUMMARY

As its name implies, irradiation proctitis is damage to the rectum incurred during irradiation treatment of cancer of the cervix. The degree of trauma varies widely from one patient to another, and ranges from slight local irritation and bleeding to profound tissue destruction and intolerable distress. Mild involvement responds well to simple measures of pain-relief, but moderate degrees may require oral steroids. In general, medications inserted for retention in the rectal pouch tend to be disappointing, and often increase the patient's discomfort. Where tissue destruction is severe, fecal diversion or, sometimes, resection of bowel must be undertaken. It must be stressed to the patient that her unenviable plight is the unwelcome result of vigorous treatment for her radical disease. It has not happened because someone was careless or inept. The woman with severe irradiation proctitis deserves sympathetic and enlightened treatment, for hers can be a miserable and tormented existence.

Emergency Room Organization

Hospital emergency room organization and management are covered in a recent publication developed by the American Hospital Association and the American College of Surgeons. It is entitled *THE EMERGENCY DEPARTMENT IN THE HOSPITAL: A GUIDE TO ORGANIZATION AND MANAGEMENT*, and it covers such subjects as equipment and staffing, and attempts to enunciate principles under which operation of the facilities can be tailored to the needs of the particular community.

Whether the dramatic increase in emergency patients has been the result of changes in the way people live, or a change in their attitudes toward hospitals, the increased demands have produced a traffic jam that must be solved.

Proper operation of the emergency department

depends upon the cooperation of the hospital and the medical staff. The hospital furnishes the medical facilities and equipment and the nursing service; the staff furnishes the physician component.

The most difficult of all the problems is the physician staffing. The guide outlines the various methods which have been used to assure 24-hour coverage, and states the principles upon which a clinical-procedures manual can be drawn up. It also discusses the legal implications of emergency care, and the relationships between the emergency department and the police, the press and other public agencies.

The book may be obtained from the American Hospital Association, 840 North Lake Shore Drive, Chicago 11. The price is \$1.00.

Adrenogenital Syndrome in Male, Salt-Losing Type

Report of a Case

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THE EARLY DIAGNOSIS of congenital adrenal hyperplasia in males is difficult. It is especially hard to diagnose the uncomplicated form in which sodium-losing and/or hypertension are not part of the syndrome. The *sine qua non* for suspecting the adrenogenital syndrome in females is, of course, an enlarged clitoris present at birth. However, macrogenitosomia precox in the male is not manifest for several years, and the precocious sexual development is "incomplete" in type, since there is marked development of the penis, sexual hair and other secondary sexual characteristics, but the testes remain small and immature.

Wilkins¹ states that approximately one-fourth of the patients with congenital adrenal hyperplasia exhibit an electrolyte disorder. However, he further points out the true incidence may be much greater than has been suspected, since many of these patients, especially the males, die undiagnosed at early ages.

CASE REPORT

This case report deals with a white male infant who was first seen at 5½ weeks of age, and was diagnosed as having congenital adrenal hyperplasia of the sodium-losing type. The results of therapy and follow up to age 10 months will be presented.

G. L., a 5½-week-old white male, was first seen at the Raymond Blank Memorial Hospital, Des Moines, because of failure to thrive. This first-born child weighed 7 lbs., 15 oz. at birth. The pregnancy had been uncomplicated, but the delivery was described as having been "a little hard." The patient was kept in an incubator for several hours after delivery because of his failure to initiate spontaneous respirations immediately. The subsequent course was thought to have been normal, and the baby was discharged on the third postpartum day.

The infant was fed a proprietary formula, and was noted to take four ounces at four-hour intervals soon following his discharge from the hospital, but during the subsequent five weeks, his intake gradually decreased. Vomiting was never a problem, although he would occasionally "spit up" a small amount after a feeding. There had been no diarrhea; in fact, the child tended to be somewhat constipated. He had not been febrile, and had no intercurrent illness.

The family history failed to reveal other cases of definite or suspected congenital adrenal hyperplasia.

Physical examination revealed an emaciated, fussy, hyperpigmented, white male, in no acute distress. Initial measurements were: weight 6 lbs., 11 oz., length 21 inches, head circumference 15 inches, and chest circumference 13½ inches. The mucous membranes were moist. Tissue turgor was fairly good, and the child seemed only mildly dehydrated. There was no evidence of respiratory or cardiac disease. The liver was palpable 2 cm. below the right costal margin. The penis had been circumcised and was normal in size. Both testes were palpable in the scrotum. The extremities moved well, and an active Moro reflex was present. The skin was hyperpigmented, with especially marked pigmentation of the areolae and the scrotum.

Laboratory data upon admission revealed a serum sodium of 126 mEq./L., a chloride of 98 mEq./L., and a BUN of 61 mg. per cent. The carbon dioxide content was 16 mEq./L. The hemogram was essentially normal, as was the initial urinalysis, except for a specific gravity of 1.006 in a dehydrated infant. The additional laboratory data accumulated during his hospitalization are presented in Table 1.

Therapy included intravenous fluids, half-normal saline in 5 per cent glucose in distilled water, initially, followed by normal saline in 5 per cent glucose in distilled water, since the serum sodium remained low. After a 24-hour urine had been collected for 17-ketosteroid and 17-hydroxysteroid determinations, the child was treated orally with 10

TABLE I
SERUM CHEMISTRIES DURING HOSPITALIZATION AND FOLLOW-UP

Date	mEq./L.			mEq./L. CO ₂	Mg. % BUN	Blood Sugar	Therapy
	Na	K	Cl			Mg. %	
10-16-61	126	8.5	98	16	61		1/2 N/S I. V.
10-18-61	123	8.1	93	15	34	111	N/S I. V.
10-18-61*	131	6.8		17			
10-19-61	138	7.4	99	14			
10-20-61	142	5.9	108	16	14		Cortef, 40 mg. daily DOCA, 1 mg. daily
10-23-61						101	
10-24-61	143	6.4	107	24			Cortef, 30 mg. daily
10-27-61	139	5.8	99	24			Cortef, 20 mg. daily
10-30-61	132	6.0	95	23			D. C. DOCA; Florinef, 0.1 mg. daily; 1/4 tsp. added NaCl daily
11- 6-61	143	6.8	99	22	21		Discharged
11-14-61	125	5.0	108	22			
11-16-61	148						
11-27-61	141	5.4					
12-16-61	139	6.9	103				Cortef, 15 mg. daily
3- 8-62	142	4.8	106				Cortef, 10 mg. daily
5-31-62	143	5.8	112				

* 9:00 p.m.

mg. hydrocortisone at six-hour intervals, and 1 mg. desoxycorticosterone acetate (DOCA) intramuscularly, daily.

As the child's serum electrolytes became normal, his oral intake increased and the intravenous fluids were discontinued. During the subsequent ten days, the hydrocortisone was reduced to 10 mg. at 12-hour intervals, and 9 α -flurohydrocortisone, 0.1 mg. by mouth daily, was substituted for the DOCA. To maintain normal electrolytes, it was found necessary to give an additional quarter-teaspoon of salt daily (2 grams).

The initial 17-ketosteroid level was 3.6 mg./24-hour urine, and the 17-ketogenic* steroids were 10.9 mg./24-hour urine. After two weeks of substitution steroid therapy, these values were 0.9

* 17-hydroxysteroids and 11-oxysteroids.

mg./24 hours, and 1.1 mg./24 hours, respectively. These initial values and the response to therapy confirmed the initial diagnosis of adrenogenital syndrome.

When the child was discharged, 2½ weeks after admission he had gained 2½ pounds, his appetite was excellent, and his electrolytes were within normal limits.

During the eight months since his discharge, the child has continued to do well. However, he remains below the 16th percentile in both height and weight (Iowa Growth Chart). The steroid dosage has been further reduced to 5 mg. hydrocortisone at 12-hour intervals. The 9 α -flurohydrocortisone remains at 0.1 mg. daily, and a quarter-teaspoon of added salt is still required. The skin hyperpigmentation has disappeared. At four months of age, his 17-ketosteroids measured 0.6 mg. per 24-hour urine, which is within normal limits.

DISCUSSION

Reports that some infants with congenital adrenal hyperplasia also had an electrolyte disorder began to appear in the literature in 1939.² It was subsequently found that treatment with table salt and/or DOCA helped in adjusting these electrolyte abnormalities. If untreated, these patients often died due to cardiovascular collapse, from either hyperkalemia or hyponatremia and dehydration. It was also noted that this therapy did not alter the basic adrenal disease, and that excessive virilization and growth continued.^{3, 4}

Wilkins *et al.*⁵ demonstrated that cortisone, administered in small doses, suppressed the abnormal androgenic activity of the adrenal.

Other subvariants of congenital adrenal hyperplasia have been hypertension without demonstrable electrolyte abnormality,⁶ a tendency to hypoglycemia,⁷ periodic fever,⁸ and "late sodium loss."⁹

It is beyond the scope of this report to review all of the biologic defects and the synthesis of hydrocortisone. Suffice it to say that hydrocortisone (compound F) is synthesized by the hydroxylation of progesterone at carbon atoms 11, 17 and 21. It has been repeatedly demonstrated that lack of 21-hydroxylase gives rise to the basic disease. If 11-hydroxylase is also lacking, the patient manifests hypertension as well.¹⁰ The precise mechanism of sodium loss and potassium retention is not clear. It has been postulated that these patients secrete a "salt losing" hormone, but this has not been proved. Aldosterone synthesis and/or utilization may provide the answer to this facet of the disease process, for there is an increase in aldosterone in the blood of the non-salt loser, but there is none in those with sodium loss.

When one is confronted with a male infant with anorexia, irritability and dehydration, he should consider the possibility of the salt-losing form of congenital adrenal hyperplasia. These children

usually dehydrate to a greater degree than one would expect from the scant vomiting that is reported. Diarrhea is a less common symptom. Anuria, tachycardia and cyanosis may follow the initial complaints. The serum chemistries are of great aid in diagnosis. The sodium is low and the chloride is also frequently decreased, but the potassium and BUN are usually elevated. The electrocardiogram may show the effects of an elevated potassium on the myocardium. Erroneous diagnoses such as pyloric stenosis, intestinal obstruction or gastroenteritis may be postulated. The serum electrolyte pattern in children with pyloric stenosis shows a low or normal potassium, a low chloride, and a decreased sodium. The carbon dioxide content is elevated.

Virilizing adrenal hyperplasia of the sodium-losing type is more difficult to treat than is any of the other disease manifestations. The dehydrated infant should be given 4 to 8 Gm. of salt during the first 24 hours, followed by maintenance doses of from 2 to 6 Gm. daily. DOCA is given immediately, and then daily doses of 1 to 4 mg. are administered as needed, to restore and maintain normal electrolytes. Cortisone therapy is withheld until two 24-hour urines have been collected for 17-ketosteroid determinations. These may be "normally elevated" during the first two weeks of life, and a urine pregnantriol determination may then be of value. This abnormal degradation metabolite is found in the urines of newborns who have the 21-hydroxylase deficit. After two weeks of age, the normal 24-hour urine 17-ketosteroid value should be less than 1 mg.¹¹

Wilkins¹² prefers intramuscular cortisone initially, since response is more predictable and the adrenals are suppressed quickly. Later, the maintenance doses can be either oral, two or three times each day, or intramuscular at three- to four-day intervals. Maintenance therapy must be individualized, and 24-hour 17-ketosteroid urine levels must be used to titrate the dosage. One must also follow the patient's growth and osseous development, for if steroid replacement is inadequate, the bone age will progress beyond the chronologic age. The converse is also true; i.e., too much steroid will retard the bone age.

Originally salt loss was treated by implantation of DOCA pellets. In infants and children, however, 9 α -flurohydrocortisone in doses of 0.1 to 0.2 mg. by mouth, plus cortisone and salt, may well control the salt-losing tendency. Larger doses have been shown to produce hypertension. Eventually, one may expect the patient not to require sodium-retaining steroids, except during periods of extreme salt depletion.¹¹

The pigmentation exhibited by our patient is thought to have resulted from an increased secretion of melanocyte-stimulating hormone by the pituitary *pars intermedia*. This pigmentation disappears rapidly with cortisone therapy, and has been

observed to reappear when a relapse occurred.¹

It has been noted that male children who are afflicted with congenital adrenal hyperplasia, but who have received no steroid therapy until their bone age reached 12-14 years, experience rapid testicular development under the indirect influence of cortisone therapy. These patients then become fertile, as the spermatogenesis responds to the testicular androgens produced after the suppression of the adrenals.

This disease is inherited as a homozygous, autosomal recessive characteristic. Therefore, each parent of an affected child must have been heterozygous for the syndrome. Since it has been estimated that one out of 50 to 100 adults is heterozygous for this condition, the chances of marriage between heterozygotes are between 1:2,500 and 1:10,000. Since one of four children of any such marriage would theoretically be homozygous and affected, the chance that any single birth will produce a case of adrenogenital syndrome would be between 1:10,000 and 1:40,000. Attempts to identify the heterozygous state have thus far been unsuccessful.

SUMMARY

A case of adrenogenital syndrome of the sodium-losing type, in a male infant, has been presented. The different manifestations of the syndrome have been discussed, and the enzymatic defect, diagnosis and treatment have been briefly reviewed. The genetics of this condition have been commented upon.

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Transmutation of Rhesus and MN Blood Types of Peptic Ulcer Patients by Blood Transfusion

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IN 1962 WE REPORTED the results of a study which suggested an association between the Rhesus and MN blood groups and certain diseases.¹ These findings are of particular interest because heretofore only in the instance of the ABO blood groups has convincing evidence of an association to disease been found. Statistically significant differences were found between the Rhesus blood group frequencies of the controls, and the Rhesus blood group frequencies of patients with duodenal and gastric ulcer, gastric carcinoma and rheumatic fever. Statistically significant differences were also found between the MN blood group frequencies of the controls and those of patients with rheumatic fever. The differences between the Rhesus blood group frequencies of the controls and the patients with diabetes mellitus, and the MN blood group frequencies of the controls and the patients with peptic ulcer, gastric carcinoma and diabetes mellitus were not statistically significant.

The authors suggested that the findings indicate an increased or decreased susceptibility of persons with specific blood types to the diseases in question. Thus, it was suggested that the statistically significant increase in the frequency of the R_1R_2 presumptive genotype in duodenal and gastric ulcer patients indicates an increased susceptibility to duodenal and gastric ulcer in persons of this blood type. Since the frequencies of R_1R_1 and R_2r presumptive genotypes were reduced in

patients with gastric carcinoma compared with the controls, it was suggested that persons of these prospective genotypes have a reduced liability to this disorder. The findings in rheumatic fever patients suggested that individuals with R_2r and $(r'r'')r$ presumptive genotypes have an increased susceptibility to this disease. The MN findings showed an increased frequency of NN genotype in rheumatic fever, and were interpreted to indicate an increased susceptibility to this disease in persons with this genotype. The magnitude of the differences between the blood group frequencies of the controls and those of the patients were large, and thus provided formidable support for these conclusions. It was implied that although the mechanisms involved are not understood, the association is probably cause-and-effect in nature.

The results of *in vitro* and *in vivo* investigations reported by Clarke *et al.*² establish that the giving of one or more units of Rhesus or MN incompatible blood will cause a temporary change or transmutation of the recipient's blood type. These authors suggested that this "transfusion effect" might explain the statistically significant differences between the Rhesus and MN blood group frequencies of the controls and patients reported in our earlier communication which are summarized above. Since the Rhesus-positive subtypes which are determined by the rh' , rh'' and hr' agglutinogens and the MN blood type were not determined prior to transfusion, it is probable that most of the transfused patients included in the study did receive Rhesus-positive and MN-incompatible blood. Since Rh_0 typing was done routinely prior to transfusion, there is no question of a transfusion effect's influencing the Rhesus positive-negative blood group frequencies. Since it was not known which of the patients who provided the clinical material for the earlier study had been transfused prior to the blood typing done for the study, it was not possible to test the blood transfusion effect hypothesis in this data.

Mr. Gerald Tweed is a medical student and Dr. Buckwalter is a professor in the Department of Surgery of the S.U.I. College of Medicine; the statistical analyses used in this study were made by John H. Edwards, M.R.C.P., Univ. of Birmingham, England.

These researches were made possible by grants from the National Institutes of Health.

During the past three months a study designed to investigate the possibility of a transfusion effect in our duodenal and gastric ulcer data has been completed. The findings of this study are reported in this communication.

MATERIAL AND METHODS

The case records of all the duodenal and gastric ulcer patients which provided the clinical material for the first study were reviewed. The records were carefully searched for information concerning whether and when the patients had received blood transfusions. Since the date that the blood grouping was done for the project was known, it was then possible to place each patient into one of three categories. The first category consisted of those patients who had received no blood transfusions prior to the blood grouping done for the study. In the second category were those patients who had received one or more units of blood 90 days or less prior to the blood grouping done for the study. Those patients about whom insufficient information was available to establish their transfusion status definitely were placed in a third group and were not included in the study. Duodenal and gastric ulcer patients who had been seen since preparation of the previous report and whose transfusion status was known, were included.

The Rhesus and MN blood group frequencies observed in the duodenal and gastric ulcer patients, transfused and not transfused, were then compared with the blood group frequencies of the controls that had been used in the original study. The same statistical methods which were described in detail in the previous communication were used to analyze the data.

RESULTS

In the tables, the numbers and percentages of controls and of the patients of the common presumptive Rhesus genotypes and the MN genotypes are indicated. In this report, the Rhesus blood group and the presumptive Rhesus genotype are considered the same, and when the word "presumptive" does not appear before "genotype," it is implied. For purposes of brevity, the nomenclature suggested by Wiener is used:³ rr (cde/cde), R₁R₁ (CDe/CDe), R₁r (CDe/cde), R₁R₂ (CDe/cDE), R₂r (cDE/cde), R₀r (cDe/cde), and r'r''r (cDe/cde) (cDE/cde).

In Part I of the tables, the total chi square value (X²) and its component parts obtained by comparing the control and patient data are recorded. In the analysis of the Rhesus data, there are six degrees of freedom. There are two degrees of freedom in the MN analysis.

In Part II of the tables, the results obtained

TABLE I
RESULTS OF STATISTICAL ANALYSIS OF RHESUS BLOOD GROUP DATA FROM DUODENAL ULCER PATIENTS TRANSFUSED PRIOR TO BLOOD GROUPING

Part I					
	Controls		Patients		X ²
	N	%	N	%	
rr	338	15.50	33	13.58	0.72
R ₁ R ₁	382	17.51	17	7.00	3.83
R ₁ r	723	33.15	64	26.34	1.77
R ₁ R ₂	303	13.89	97	39.92	9.47
R ₂ r	319	14.63	18	7.41	2.86
R ₀ r	91	4.17	9	3.70	0.34
(r',r'')r	25	1.15	5	2.06	1.21
Totals	2181		243		20.20**

Part II					
	X	Y	SE(Y)	W	X ²
R ₁ R ₁ : rr	0.4558	-0.7857	0.3077	10.559	6.52**
R ₁ r : rr	0.9067	-0.0980	0.2242	19.893	0.19
R ₁ R ₂ : rr	3.2789	1.1875	0.2165	21.335	30.09***
R ₂ r : rr	0.5779	-0.5483	0.3032	10.875	3.27*
R ₀ r : rr	1.0130	0.0129	0.3942	6.437	0.00
(r',r'')r : rr	2.0485	0.7171	0.5227	3.659	1.88

* P < .05 ** P < .01 *** P < .001

when the data are analyzed according to the method of Woolf,⁴ are recorded. This method involves determining the incidence of the disease in persons of the different blood types relative to that in a specific reference blood type, from the control and patient blood group frequencies. In Part II of the tables, the relative incidence of disease in persons of specific blood types or genotypes is recorded in column (X). Thus, the incidence of disease in the various Rhesus genotypes is determined relative to that in rr genotype, from the control and patient data. In the MN blood group, the disease incidence is related to genotype MM. In discussing the results, an increased frequency of a blood type or genotype in the patients as compared with the controls usually will be expressed as an increased relative incidence of the disease in persons of the blood type or genotype in question. The natural logarithms (Y) of the relative incidences, the natural logarithms of the standard errors for each (SE (Y)), the weights for each genotype (W), and the chi square (X²) values are recorded in the indicated columns of the tables.

The most striking finding indicated in Table 1 is the three-fold increase in the frequency of R₁R₂ genotype in the duodenal ulcer patients, as compared with the controls. The increased relative incidence of disease in persons of this genotype is highly significant, as is indicated by the X² at the

far right in the table. Compensatory reductions in the relative incidence of disease in the other genotypes are to be observed, the most striking occurring in the R_1R_1 and the R_2r genotypes. Again, looking at the column to the far right, one notes that the decrease in the relative incidence of disease in persons of these genotypes is statistically significant, but at substantially lower levels than the increased relative incidence in persons of the R_1R_2 genotype.

In Table 2 are recorded the data obtained from duodenal ulcer patients who were not transfused. Observe that there appears to be an increase in the relative incidence of duodenal ulcer in persons of the R_1R_2 genotype. However, note that the magnitude of this increase is much less than in the transfused patients, being barely statistically significant, as indicated by the X^2 value at the far right.

TABLE 2
RESULTS OF STATISTICAL ANALYSIS OF RHESUS BLOOD GROUP DATA FROM DUODENAL ULCER PATIENTS NOT TRANSFUSED PRIOR TO BLOOD GROUPING

Part I					
	Controls		Patients		X^2
	N	%	N	%	
rr	338	15.50	130	14.49	0.65
R_1R_1	382	17.51	131	14.60	1.80
R_1r	723	33.15	311	34.67	0.66
R_1R_2	303	13.89	163	18.17	2.77
R_2r	319	14.63	125	13.94	0.46
R_0r	91	4.17	30	3.34	1.05
$(r',r'')r$	25	1.15	7	0.78	0.90
Totals	2181		897		8.29

Part II					
	X	Y	SE(Y)	W	X^2
R_1R_1 : rr	0.8916	-0.1147	0.1446	47.842	0.63
R_1r : rr	1.1184	0.1119	0.1235	65.576	0.82
R_1R_2 : rr	1.3987	0.3355	0.1417	49.785	5.60*
R_2r : rr	1.0188	0.0186	0.1476	45.902	0.02
R_0r : rr	0.8571	-0.1542	0.2345	18.191	0.43
$(r',r'')r$: rr	0.7280	-0.3175	0.4399	5.168	0.52

* $P < .05$

In Table 3, when the data obtained from the transfused and non-transfused duodenal ulcer patients are combined and analyzed, note that, as would be anticipated, the increased relative incidence in the R_1R_2 genotype is between those observed in the transfused and non-transfused patients. The statistical significance of this finding is of the same order of magnitude as that reported for duodenal ulcer in the first communication.

TABLE 3
RESULTS OF STATISTICAL ANALYSIS OF RHESUS BLOOD GROUP DATA WHEN TRANSFUSED AND NON-TRANSFUSED DUODENAL ULCER PATIENTS ARE COMBINED

Part I					
	Controls		Patients		X^2
	N	%	N	%	
rr	338	15.50	163	14.30	0.84
R_1R_1	382	17.51	148	12.98	3.10
R_1r	723	33.15	375	32.89	0.12
R_1R_2	303	13.89	260	22.81	5.92
R_2r	319	14.63	143	12.54	1.53
R_0r	91	4.17	39	3.42	1.04
$(r',r'')r$					
Totals	2156		1128		12.79*

Part II					
	X	Y	SE(Y)	W	X^2
R_1R_1 : rr	0.8034	-0.2189	0.1359	54.147	2.59
R_1r : rr	1.0755	0.0728	0.1146	76.084	0.40
R_1R_2 : rr	1.7793	0.5762	0.1274	61.576	20.45**
R_2r : rr	0.9296	-0.0731	0.1386	52.025	0.28
R_0r : rr	0.8887	-0.1180	0.2138	21.871	0.30
$(r',r'')r$: rr	0.9953	-0.0047	0.3639	7.551	0.00

* $P < .05$ ** $P < .001$

The findings in gastric ulcer are similar to those in duodenal ulcer. In Table 4, observe the marked increase in the relative incidence of gastric ulcer in persons of R_1R_2 genotype. This increase, again, is chiefly at the expense of the R_1R_1 and R_2r genotypes. The statistical significance of the findings reflected in the X^2 values on the right are less, perhaps because of the smaller size of the sample.

In Table 5 the findings for the non-transfused gastric ulcer patients differ in an interesting way from those of the non-transfused duodenal ulcer patients. Instead of an increased relative incidence of the disease in persons of R_1R_2 genotype, note that the relative incidence of the disorder is decreased in persons of that genotype. Consequently, when the data obtained from the transfused and non-transfused gastric ulcer patients are combined (Table 6), the increased relative incidence in the R_1R_2 genotype, is not statistically significant. These differ slightly from the findings for gastric ulcer reported in the original communication, where the relative incidence of gastric ulcer was found significantly increased in persons of R_1R_2 genotype. The explanation lies in the new cases of gastric ulcer which have been added since the first report.

In Table 7 are recorded the MN blood group data obtained from the transfused duodenal ulcer

TABLE 4
RESULTS OF STATISTICAL ANALYSIS OF RHESUS BLOOD
GROUP DATA FROM GASTRIC ULCER PATIENTS
TRANSFUSED PRIOR TO BLOOD GROUPING

Part I					
	Controls		Patients		X ²
	N	%	N	%	
rr	338	15.50	13	12.75	0.69
R ₁ R ₁	382	17.51	8	7.84	2.31
R ₁ r	723	33.15	30	29.41	0.64
R ₁ R ₂	303	13.89	43	42.16	7.17
R ₂ r	319	14.63	6	5.88	2.29
R ₀ r	91	4.17	1	0.98	1.57
(r' ₁ r'')r	25	1.15	1	0.98	0.00
Total	2181		102		14.67*

Part II					
	X	Y	SE(Y)	W	X ²
R ₁ R ₁ : rr	0.5445	-0.6079	0.4555	4.819	1.78
R ₁ r : rr	1.0788	0.0759	0.3385	8.726	0.05
R ₁ R ₂ : rr	3.6898	1.3056	0.3262	9.395	16.01**
R ₂ r : rr	0.4890	-0.7153	0.4997	4.005	2.05
R ₀ r : rr	0.2857	-1.2528	1.0444	0.917	1.44
(r' ₁ r'')r : rr	1.0400	0.0392	1.0582	0.893	0.00

* P < .05 ** P < .001

TABLE 5
RESULTS OF STATISTICAL ANALYSIS OF RHESUS BLOOD
GROUP DATA FROM GASTRIC ULCER PATIENTS NOT
TRANSFUSED PRIOR TO BLOOD GROUPING

Part I					
	Controls		Patients		X ²
	N	%	N	%	
rr	338	15.50	45	17.11	0.62
R ₁ R ₁	382	17.51	48	18.25	0.27
R ₁ r	723	33.15	90	34.22	0.28
R ₁ R ₂	303	13.89	28	10.65	1.35
R ₂ r	319	14.63	34	12.93	0.68
R ₀ r	91	4.17	16	6.08	1.40
(r' ₁ r'')r	25	1.15	2	0.76	0.00
Total	2181		263		4.60

Part II					
	X	Y	SE(Y)	W	X ²
R ₁ R ₁ : rr	0.9438	-0.0578	0.2205	20.563	0.07
R ₁ r : rr	0.9350	-0.0672	0.1941	26.543	0.12
R ₁ R ₂ : rr	0.6941	-0.3651	0.2534	15.577	2.08
R ₂ r : rr	0.8006	-0.2224	0.2403	17.323	0.86
R ₀ r : rr	1.3206	0.2781	0.3141	10.135	0.78
(r' ₁ r'')r : rr	0.6009	-0.5093	0.7518	1.769	0.00

TABLE 6
RESULTS OF STATISTICAL ANALYSIS OF RHESUS BLOOD
GROUP DATA WHEN TRANSFUSED AND NON-
TRANSFUSED GASTRIC ULCER PATIENTS ARE
COMBINED

Part I					
	Controls		Patients		X ²
	N	%	N	%	
rr	338	15.50	58	15.89	0.18
R ₁ R ₁	382	17.51	56	15.34	0.93
R ₁ r	723	33.15	120	32.88	0.08
R ₁ R ₂	303	13.89	72	19.73	2.69
R ₂ r	319	14.63	40	10.96	1.73
R ₀ r	91	4.17	16	4.38	0.18
(r' ₁ r'')r	25	1.15	3	0.82	0.55
Total	2181		365		6.34

Part II					
	X	Y	SE(Y)	W	X ²
R ₁ R ₁ : rr	0.8543	-0.1575	0.2017	24.585	0.61
R ₁ r : rr	0.9672	-0.0333	0.1730	33.426	0.04
R ₁ R ₂ : rr	1.3848	0.3255	0.1934	26.746	2.83
R ₂ r : rr	0.7307	-0.3137	0.2199	20.689	2.04
R ₀ r : rr	1.0246	0.0243	0.3061	10.674	0.01
(r' ₁ r'')r : rr	0.6993	-0.3577	0.6273	2.541	0.33

TABLE 7
RESULTS OF STATISTICAL ANALYSIS OF MN BLOOD
GROUP DATA FROM DUODENAL ULCER PATIENTS
TRANSFUSED PRIOR TO BLOOD GROUPING

Part I					
	Controls		Patients		X ²
	N	%	N	%	
MM	587	26.85	43	17.62	2.69
MN	1208	55.26	184	75.41	3.94
NN	391	17.89	17	6.97	3.95
Total	2186		244		10.58

Part II					
	X	Y	SE(Y)	W	X ²
MN:MM	2.0793	0.7320	0.1767	32.029	17.16*
NN:MM	0.5935	-0.5217	0.2938	11.582	3.15

* P < .001

patients. Note the striking increase in the relative incidence of duodenal ulcer in persons of MN blood group. This increase is chiefly at the expense of the NN genotype. The increase in the MN genotype is highly significant, as is indicated by the X² at the right.

The data obtained from the patients who were not transfused contrasts sharply with these findings (Table 8). Note that instead of an increase in relative incidence of the disorder in persons of MN genotype, there is a decreased relative incidence of disease in persons of that sort. This finding has borderline statistical significance. Note that when the data obtained from the transfused and non-transfused patients are combined, the blood type frequencies of the patients and controls agree very closely (Table 9).

TABLE 8
RESULTS OF STATISTICAL ANALYSIS OF MN BLOOD GROUP DATA FROM DUODENAL ULCER PATIENTS NOT TRANSFUSED PRIOR TO BLOOD GROUPING

Part I					
	Controls		Patients		X ²
	N	%	N	%	
MM	587	26.85	270	30.10	1.55
MN	1208	55.26	459	51.17	1.40
NN	391	17.89	168	18.73	0.50
Totals	2186		897		3.45
Part II					
	X	Y	SE(Y)	W	X ²
MN:MM	0.8261	-0.1911	0.0917	118.853	4.34*
NN:MM	0.9341	-0.0681	0.1180	71.854	0.33

* P < .05

TABLE 9
RESULTS OF STATISTICAL ANALYSIS OF MN BLOOD GROUP DATA WHEN TRANSFUSED AND NON-TRANSFUSED DUODENAL ULCER PATIENTS ARE COMBINED

Part I					
	Controls		Patients		X ²
	N	%	N	%	
MM	587	26.85	313	27.43	0.31
MN	1208	55.26	643	56.35	0.40
NN	391	17.89	185	16.21	1.10
Total	2186		1141		1.81
Part II					
	X	Y	SE(Y)	W	X ²
MN:MM	0.9982	-0.0018	0.0853	137.335	0.00
NN:MM	0.8873	-0.1195	0.1134	77.752	1.11

In Tables 10, 11 and 12 are recorded the MN findings in gastric ulcer. Note that differences between the blood group frequencies of the controls and patients are similar to those found in duodenal ulcer. Observe the marked increase in the relative incidence of the disorder in persons of MN genotype in the transfused gastric ulcer patients, chiefly at the expense of the NN genotype; the decreased relative incidence in the MN genotype in the non-transfused patients; and finally the almost identical blood type frequency percentages in the controls and patients when data on the transfused and non-transfused are combined.

TABLE 10
RESULTS OF STATISTICAL ANALYSIS OF MN BLOOD GROUP DATA FROM GASTRIC ULCER PATIENTS TRANSFUSED PRIOR TO BLOOD GROUPING

Part I					
	Controls		Patients		X ²
	N	%	N	%	
MM	587	26.85	17	16.83	1.92
MN	1208	55.26	76	75.25	2.62
NN	391	17.89	8	7.92	2.34
Totals	2186		101		6.88
Part II					
	X	Y	SE(Y)	W	X ²
MN:MM	2.1724	0.7758	0.2730	13.421	8.08*
NN:MM	0.7065	-0.3475	0.4337	5.317	0.64

* P < .01

TABLE 11
RESULTS OF STATISTICAL ANALYSIS OF MN BLOOD GROUP DATA FROM GASTRIC ULCER PATIENTS NOT TRANSFUSED PRIOR TO BLOOD GROUPING

Part I					
	Controls		Patients		X ²
	N	%	N	%	
MM	587	26.85	81	30.68	1.13
MN	1208	55.26	133	50.38	1.01
NN	391	17.89	50	18.94	0.38
Totals	2186		264		2.52
Part II					
	X	Y	SE(Y)	W	X ²
MN:MM	0.7979	-0.2258	0.1497	44.651	2.28
NN:MM	0.9267	-0.0761	0.1913	27.317	0.16

TABLE 12
RESULTS OF STATISTICAL ANALYSIS OF MN BLOOD
GROUP DATA WHEN TRANSFUSED AND NON-
TRANSFUSED GASTRIC ULCER PATIENTS ARE
COMBINED

Part I					
	Controls		Patients		X ²
	N	%	N	%	
MM	587	26.85	98	26.85	0.00
MN	1208	55.26	209	57.26	0.47
NN	391	17.89	58	15.89	0.84
Totals	2186		365		1.31

Part II					
	X	Y	SE(Y)	W	X ²
MN:MM	1.0363	0.0357	0.1324	57.077	0.07
NN:MM	0.8885	-0.1182	0.1781	31.539	0.44

DISCUSSION

The findings indicate a marked transfusion effect in both the Rhesus and the MN studies. This is seen in both the duodenal and gastric ulcer data. The mechanics of the blood group effect have been described by Clarke *et al.*² In Table 13 are recorded the percentages of Rhesus and MN types which these authors calculated would be observed, assuming that 100, 50 and 33⅓ per cent of our ulcer patients had been transfused

with one unit of blood before their blood was typed for the study. Also recorded in the table, are the findings of the current study in transfused and non-transfused duodenal ulcer patients. Note the general agreement between the blood group frequencies of our transfused duodenal ulcer patients and the 100 per cent transfused "expected" column.

Several factors suggest themselves as possible explanations for the failure to find closer agreement between the 100 per cent transfused "expected" column and the "observed" transfused patient data. Perhaps the most important of these is the misclassification of patients. As indicated, case records were carefully studied, and the equivocal cases were excluded from the study. However, undoubtedly some patients who had been transfused prior to the blood typing used for the study were inadvertently included in the non-transfused category, and the converse must also be true. The numbers of misclassified patients is small, however, and the probable effect on the results is believed to be of little consequence. In order to eliminate the possibility of a transfusion effect as far as possible from our non-transfused group of patients, patients who had received blood as long as three months prior to the blood grouping done for the project were included in the transfused group. Probably the transfusion effect was gone long before this time. Clarke *et al.* state that the effect lasts at least four weeks. Since most of the patients in the transfused category were given blood less than a month prior to the blood typing

TABLE 13
PREDICTED EFFECT OF TRANSFUSING RHESUS-POSITIVE AND MN-INCOMPATIBLE BLOOD ON BLOOD TYPE
FREQUENCY PERCENTAGES; OBSERVED BLOOD TYPE FREQUENCY PERCENTAGES IN DUODENAL ULCER PATIENTS
AND CONTROLS

Blood Group	Expected Percentages			Observed Percentages		
	33⅓%	50%	100%	Transfused	Non-Transfused	Controls*
	Transfused*	Transfused*	Transfused*	Patients	Patients	
rr	15.50	15.50	15.50	13.58	14.49	15.50
R ₁ R ₁	12.90	10.59	3.72	7.00	14.60	17.51
R ₁ r	32.83	32.67	31.99	26.34	34.67	33.15
R ₁ R ₂	23.67	28.56	43.32	39.92	18.17	13.89
R ₂ r	11.09	9.34	4.08	7.41	13.94	14.63
R ₀ r	2.85	2.18	0.24	3.70	3.34	4.17
(r',r'')r	1.15	1.15	1.15	2.06	0.78	1.15
MM	20.30	17.03	7.22	17.62	30.10	26.85
MN	66.71	72.43	89.57	75.41	51.17	55.26
NN	12.99	10.55	3.21	6.97	18.73	17.89

* Clark et al.

done for the study, the effect on the results again would be small. Approximately 50 per cent of our transfused patients received two or more, and 10 per cent five or more transfusions prior to the blood typing done for the project. The transfusion effect of multiple transfusions cannot be accurately predicted, since the types of blood given are not known. Finally, difficulty in the interpretation of the weak agglutination reactions in transfused patients related to the time, the amount and the type of blood transfused undoubtedly added to the discrepancy between the predicted and observed transfusion effect. The preceding discussion is relevant to both the Rhesus and the MN transfusion effects.

The volume of the data is sufficient to warrant the conclusion that the null hypothesis has been confirmed—that there is no Rhesus or MN blood group association in duodenal and gastric ulcer. The high frequency of the R_1R_2 genotype in the non-transfused duodenal ulcer patients, compared with the frequency of this genotype in the controls, probably indicates an unidentified specious factor or factors. The finding of a R_1R_2 frequency in the gastric ulcer patients closely approximating that found in the controls supports this concept. The Rhesus and MN blood group findings in the unaffected siblings of the duodenal and gastric ulcer patients which, in general, agree with those of the non-transfused patients, are additional support for the null hypothesis.⁵

This is the first instance in which convincing proof of a mechanism responsible for a blood group disease association has been found. The mechanisms responsible for the associations which have been shown to exist between the ABO blood groups and certain diseases,⁶ remain to be disclosed. This study thus provides an incentive for continuation of the search for the causes underlying the other blood-group disease associations. The results of this study also point out how important it is that workers in this field should retain open minds. Each explanation for the blood-group disease association which is proposed should be objectively examined on the basis of the evidence presented. The closed mind which clings tenaciously and unreasonably to a previously declared position, refusing to examine new findings on their merits, obstructs rather than assists the search for the underlying causes.

The MN genotype frequency percentage in the controls used for our studies is 55.26 per cent. About 15 per cent of the controls were hospital patients with diagnoses other than those being studied. Some of these patients had received blood transfusions prior to the blood typing done for the study. It is probable that the transfusion effect is responsible for the previously unexplained high MN frequency in the controls, in excess of the maximum of the 50 per cent which is ex-

pected.⁷ This explanation is supported by an MN frequency of 49.8 per cent in a group of 823 of the spouses of the patients.⁵

It is probable that the statistically significant differences found between the Rhesus blood group frequencies of the controls and the gastric carcinoma and rheumatic fever patients, and the MN blood group frequencies of the controls and the rheumatic fever patients, reflect transfusion effects. The data concerning the transfusion status of gastric carcinoma and rheumatic fever patients are being collected. The absence of any significant differences between the Rh and MN blood group frequencies of diabetes mellitus patients and the controls suggests that relatively few of these patients were transfused prior to the typing done for the study. This is true. An educated guess is that less than 5 per cent of these received blood prior to the typing.

In researches concerned with the disease associations of blood groups which are *not determined* in the giving of blood transfusions, it is mandatory to know the transfusion status of each patient. Those patients who have received one or more transfusions 90 days or less prior to the blood grouping done for the study should be excluded from such studies. It is rather surprising that the possible importance of a "transfusion effect" to these researches was first suggested by an internist geneticist rather than by a serologist.

SUMMARY

The possibility that the transfusion of Rhesus-positive and MN-incompatible blood caused a temporary change or transmutation of the Rhesus-positive and MN groups of duodenal and gastric ulcer patients has been investigated. Comparison of the Rhesus and MN blood group frequencies of transfused and non-transfused patients revealed a statistically significant transfusion effect. The close agreement of the blood group frequencies of the non-transfused patients and the controls suggests that there is no causal association between the Rhesus and MN blood groups and peptic ulcer.⁸

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When prompt, adequate treatment for the mentally ill and emotionally disturbed citizen becomes as readily available in his home community as services for his physical ills are today, then Iowa may be said to have a GOOD MENTAL HEALTH PROGRAM!

That this is entirely within the range of possibility within a reasonable length of time is the confident expectation of such experienced specialists as Paul E. Huston, M.D., director of the State Psychopathic Hospital and the Iowa Mental Health Authority; of James O. Cromwell, M.D., director of mental health in the Board of Control; and H. Kosieradzki, M.D., director of the Marshalltown Mental Health Clinic and private practitioner; and many of their colleagues.

Iowa's Mental Health Plan

Adequate treatment for the mentally ill and emotionally disturbed Iowan in his home community has been the long-range goal of the medical profession in this state for a considerable length of time. Significant impetus toward that objective was given in the mid-1950's by a Governor's Citizens Committee that was formed to consider the development of an Iowa Mental Health Program. It employed the American Psychiatric Association to make a survey and formulate recommendations, as it had already done in several other states. The APA's subsequent report proposed a broad program based on the following three points:

1. Increased appropriations to the Board of Control to permit the employment of additional competent personnel for the state institutions, in order to transform them from custodial domiciliaries into modern treatment hospitals;

2. Expansion of the operations of the Psychopathic Hospital so as to train more psychiatrists for the state institutions, for the community mental health clinics and for private practices, and to promote research and conduct related activities;

3. Strengthening of local community resources for psychiatric diagnosis and treatment.

In commenting on the situation as it existed in 1956, Dr. P. E. Huston points out that the task then seemed almost impossible. The Board of Control had no director of mental health, trained physicians were in extremely short supply throughout the entire country, new and reliable treatment methods were appearing at a painfully slow rate, and capable of providing little more than custodial

and the state hospitals were greatly overcrowded care.

"Though it might have been possible to 'steal' some personnel from other states," Dr. Huston says, "it was clear that we would have to train many persons ourselves, especially if we wanted them to stay in Iowa, and that we would have to develop our own educational and research programs to help stimulate and put the whole effort on a sound basis."

EXPANSION OF THE PSYCHOPATHIC HOSPITAL

Consequently, the Psychopathic Hospital, the major training and research center for mental health in the state, under the direction of Dr. Huston, began the implementation and expansion of a broadened program, including the following features:

1. Improved training of medical students so as to prepare future family physicians for the early recognition of mental illness and for the treatment of minor mental illnesses;

2. Instruction in mental health for physicians already engaged in family practice;

3. Increasing the number of physicians entering psychiatry as a specialty;

4. Developing an accredited training program in child psychiatry;

5. Assisting the Board of Control institutions by providing instruction for their trainees, and by consulting with them as requested with regard to problems of training, research and administration;

6. Providing more educational consultative services to community mental health clinics;

7. Developing a high-quality research program.

THE BOARD OF CONTROL EMPLOYS A DIRECTOR

Early in 1958, Dr. James O. Cromwell became director of mental health in the Board of Control. Immediately upon taking office, he coordinated his efforts with those of the Committee on Mental Health of the Iowa Medical Society and formed a professional advisory committee to assist him in laying a sound foundation for a completely reorganized state hospital system, with the aim of transforming the institutions from custodial domiciliaries into modern treatment hospitals.

Encouragement and assistance was given the new director by many professional and non-professional people too numerous to mention by name.*

A Governor's Citizens Committee was also active in helping to formulate the mental health plan.

Current members of the Director's Advisory Committee include John I. Marker, M.D., Davenport; Msgr. Timothy J. Gannon, Dubuque; Mr. Richard E. Hope, executive secretary of the Scott County United Fund, Davenport; Mr. Everett E. Daggett, Fairfield; and Mr. Donald W. Cordes, administrator of Iowa Methodist Hospital, Des Moines. Serving in consultative capacities are Madge Beauman, R.N., psychiatric nursing consultant in the Division of Mental Health of the Board of Control, and Mr. George Meintel, psychiatric social service consultant in the same governmental agency.

Fully aware of the formidable problems confronting them and desirous of meeting the challenge laid down by the American Psychiatric Association in its recommendations to the Governor's Citizens Committee, all of these men and women recognized that only by a strong team effort could they hope to devise a solution and to achieve their long-range goal. The team, they concluded, should be composed of the S.U.I. College of Medicine, the State Psychopathic Hospital with its ancillary resources, the Board of Control mental institutions, the community clinics, the psychiatrists and other physicians in private practice, and the professional

organizations related thereto. Further, the program formulated by these professional groups would need support, both financial and moral, from the Legislature and from the entire citizenry of the state.

THE IMMEDIATE GOALS OF THE STATEWIDE PROGRAM

After much deliberation, the professional advisory group concluded that first of all it would be imperative for each resource to clarify its specific role in the cooperative project. With the Psychopathic Hospital already embarked on its seven-point expanded program and showing encouraging progress, it remained for the Division of Mental Health in the Board of Control to evaluate its position and determine its objectives. Hence, with the advice and assistance of the advisory board, Dr. Cromwell formulated four immediate aims:

1. To transform the four mental health institutes into modern hospitals, and the two hospital-schools for the retarded into modern schools, training centers and hospitals;
2. To develop adequate outpatient after-care, follow-up, pre-admission and community consultative services;
3. To develop adequate in-service training for all categories of personnel needed to man a mental health program;
4. To develop research in both clinical and administrative practices.

THE SIZES OF THE INSTITUTIONS ARE REDUCED

With these aims clearly in mind, the group presented the situation and the immediate objectives to the Legislature, and appropriations were provided for the first and most essential moves toward transforming the state custodial institutions into modern treatment hospitals:

1. The recruiting of professional personnel at salaries acceptable to those capable of rendering the required services;
2. The development of a therapeutic environment conducive to good treatment procedures.

The immediate result of treatment services by an adequate professional staff was a decrease in the resident hospital populations. Seventy out of each 100 patients were discharged to their own homes; 14 out of each 100, to county homes; and 16 out of each 100, to licensed nursing and custodial homes in their respective communities.

Patients who were returned to their communities were assured of immediate readmission to the hospital, should continued care be indicated. They were also assured of after-care services, either by community clinics or by the outpatient section of the hospital. Further, the outpatient services of the state hospitals offered assistance to county homes, nursing homes and custodial homes in upgrading their facilities and patient care.

* Among those who composed the original advisory group and who actively participated in formulating the state hospital plan were Dr. Huston, who has already been mentioned, Paul M. Kersten, M.D., of Fort Dodge, James D. Mahoney, M.D., of Council Bluffs, Leonard Goodstein, Ph.D., of the S.U.I. Department of Psychology, Mr. Ernest Carter, director of social welfare in Pottawattamie County, Rt. Rev. Msgr. Timothy J. Gannon, Ph.D., of the Department of Psychology at Loras College, Dubuque, Mr. James P. Kelly, attorney at law in LeMars, Mrs. Annabelle Kent, a psychiatric social worker in the State Department of Social Welfare, Mr. Everett E. Daggett, of the Iowa Welfare Association, Fairfield, Mattie Brass, R.N., and Geraldine Busse, R.N., from the State Department of Health, Edmund G. Zimmerer, M.D., state commissioner of health, Mr. Arthur Downing and Mrs. Eleanor Carris of the State Department of Social Welfare, Mr. Merrell E. Hunt and Mr. Mario Barillos of the Vocational Rehabilitation Division of the State Department of Public Instruction. But there were many others. Representing related associations were Miss Paula Robinson, executive director of the Iowa Mental Health Association, and Mr. C. R. Christensen, executive director of the Iowa Association for Retarded Children.

IOWA INSTITUTIONS STRIVE TO MEET A.P.A. STANDARDS

With the hope of reducing the patient population in each mental health institute to 700 inpatients and 1,400 outpatients a year, Dr. Cromwell and his professional advisory board believe that efforts should be made to attain the personnel standards set by the American Psychiatric Association for an institution of that size:

31 physicians and psychiatrists
 11 clinical psychologists
 16 social workers
 54 special therapists and other professionals
 116 registered nurses
 213 attendants and/or practical nurses
 251 administrative and maintenance personnel

692 Total

For a 1,200-bed hospital school providing long-term care for the mentally retarded, the A.P.A. standards require the following personnel:

12 physicians
 12 clinical psychologists
 20 social workers
 21 special occupational therapists
 56 registered nurses
 206 attendants and/or licensed practical nurses
 222 administrative and maintenance personnel

549 Total

The physical plant, also, must meet certain A.P.A. standards as to space and ancillary facilities.

IMPROVEMENTS IN OUTPATIENT SERVICES

In discussing the third point in the immediate objectives, Dr. Cromwell points out that extramural services providing adequately for outpatient care, after-care, community consultation, pre-admission evaluation, prevention of mental illness, and public education in mental health are essential and are implied by the A.P.A. standards. "Every hospital and every hospital-school, when operated in a modern manner, must place considerable emphasis on the outpatient operation," Dr. Cromwell declares.

Therefore, it is anticipated that as the inpatient case load is lessened, insofar as numbers are concerned, the outpatient load will increase proportionately. In time, however, a balance will tend to be established, and Iowa's needs will be met.

The advisory group anticipates that part of the funds now being expended solely for operating the six mental health institutions will, in time, be available for providing community mental health facilities and personnel. The *immediate* objective, however, is to provide needed services on an outpatient basis for as large a share of the patients as possible. This type of attention is generally better for the patient, for his family and for his community—and, the doctor points out, it is also more economical.

At present, the personnel devoting full time to outpatient service varies from institution to institution, as follows:

From 1 part-time to 4 full-time psychiatrists
 From 1 part-time to 3 full-time psychologists
 From 3 to 5 full-time social workers

The occasional or part-time services of a nurse, attendant, teacher, physiotherapist and/or other special therapist.

It is believed that this effort should be doubled in the next year at each institution, and should be increased by three or five fold within seven years. At the same time, the average inpatient population should continue its downward trend to about 600 to 700 patients in each mental health institute, and from 1,000 to 1,200 in each hospital-school.

That these goals are gradually being realized is evidenced by the fact that the average daily resident population in the four mental health institutes at the end of January, 1963, was 3,185. At the schools, the population in residence was 2,338. At the same time, admissions continue to increase, and length of stay to decrease. Under the intensive treatment program now being conducted at the state institutes, 70 per cent of the new patients admitted are returning to their own homes within a matter of months, as either recovered or greatly improved.

INTENSIFICATION OF IN-SERVICE TRAINING

The third point in the state hospital system's program—in-service training—has been expanded to include all categories of personnel. Regarding the state hospital plan, Dr. Cromwell points out that caring for, treating, training, rehabilitating, educating, counseling, supervising and finding employment and placement for thousands of mentally ill and mentally retarded convalescents requires a very special technical skill and knowledge. Such skill and knowledge cannot be imparted entirely by schools and colleges; a considerable supplement must be provided by actual experience or "on-the-job training."

New techniques, better ways of doing things and new facilities are constantly being developed. Just keeping abreast requires considerable effort, and demands that emphasis be placed on in-service training in all areas of hospital operation. This is being done. In the cooperative effort—including the six mental institutions under the Board of Control, and the Psychopathic Hospital under Dr. Huston—are some 3,000 employees.

In their increasingly cooperative, coordinated effort, the Psychopathic Hospital, other departments of Iowa's two state universities and the Board of Control institutions are trying to provide:

1. A general orientation course for all employees.
2. Continuing or on-going training for all personnel through departmental meetings, with emphasis on new developments of a technical nature.
3. A general course in basic nursing skills, as they apply to the care of the mentally ill.

4. An advanced course in nursing skills.
5. A course for attendant supervisors on administration of hospital wards.
6. A coordination of effort between each hospital and the local training schools for practical nurses, in implementing in-service training for hospital attendants.
7. Affiliate training for student nurses.
8. On-going training for registered nurses, psychologists, social workers and special therapists through departmental meetings and by having the nurses attend clinical staff conferences.
9. Coordinating the further training of registered nurses by planning with colleges, the state university and the professional schools at University Hospitals.
10. Approved residency training of psychiatrists through:
 - a. A three-year regular residency at the Psychopathic Hospital.
 - b. A five-year "joint" or "package plan" residency program administered by the Psychopathic Hospital and paid for by the Board of Control, in which residents spend two or three years at Iowa City, and two to three years at Board of Control institutions.
 - c. A regular three-year approved residency program in psychiatry at the Independence and Cherokee Mental Health Institutes.

Although considerable progress has been made in all phases of the in-service training program in the past seven years, and although steady gains can be seen each year, Dr. Cromwell thinks that a considerable period of time must elapse before he and his associates, and the staffs of the various hospitals, can level off their efforts and plan just to "hold the line."

RESEARCH ACTIVITIES

In research—the fourth part of the state hospitals' new program—much progress has been made at the State Psychopathic Hospital, but relatively little at the mental health institutes, since in order to conduct scientific investigation a new complement of personnel interested in and capable of research must be built up. Clinical research has been carried on, to a limited extent, however, at each institution.

To strengthen investigation, a national standard mechanical statistical system has been established at the Board of Control offices, and it is directed by a trained statistician. As a result, a start is being made at developing significant records upon which to base and evaluate progress. Each of three mental health institutes now has a director of research and training, but as yet there is none at one mental health institute and at either of the two hospital-schools.

All of the basic clinical positions have been filled with competent personnel capable of scientific investigation. These include a clinical director and directors of departments of psychology, social

work, nursing and activity therapies. Several chiefs of service and many ancillary positions have likewise been filled by well trained people capable of such work. A few public grants have been secured to aid in carrying out research, and a meaningful, coordinated plan is being developed.

ACHIEVEMENTS AT THE PSYCHOPATHIC HOSPITAL

In 1956, Dr. Huston points out, it was estimated that from five to seven years would be necessary to put the coordinated plan into full operation. Such a program, focused upon the state's needs, requires personnel, equipment, clinical material for teaching and research, and properly designed space, he says.

The Legislature has responded by providing additional funds for personnel and for new construction at Iowa City. A children's unit of 25 beds has been completed; in fact it was dedicated in October, 1961. At the present time, however, it is operating at one-third capacity because of a lack of funds. A research wing of the Psychopathic Hospital, with flexible laboratory space, was dedicated in October, 1962, but additional funds are needed for the full operation of that unit, too.

Dr. Huston outlines developments and steps taken toward the principal objective as follows: "The teaching of medical students has been oriented more toward the early recognition of mental illness and the treatment of minor mental illnesses. As part of this endeavor, special courses of a collaborative nature have been conducted with the Departments of Internal Medicine, Pediatrics, and Obstetrics and Gynecology, and much of the teaching has concerned the problems of the non-psychiatric patient.

"To strengthen both the undergraduate-medical-student and the residency-training programs, patient visits to the Psychopathic Hospital outpatient clinic were increased from 3,000 in 1956, to 7,000 in 1962.

"The residency program has grown from six residents in training in 1956, to 20 in 1962-1963, and emphasis is placed upon training for general psychiatry. The aim here has been to train physicians who are competent in all types of psychiatric practice.

Child Psychiatry. "A definitive training program in child psychiatry has been organized," Dr. Huston reports, "using both in- and outpatients. This program is for the training of medical students, residents, physicians and paramedical personnel.

"The staff of the Department of Psychiatry has been increasingly active in programs sponsored by the American Academy of General Practice. Members of the staff participate in two or three such programs per year.

"Research activities have been greatly increased. During the past two years, 103 scientific papers by members of the Department or the staff of the hospital have been published or accepted for publication. The Department has promoted the scien-

tific and medical interest in alcoholism through sociologic researches and in the development of a small alcoholic research clinic. This latter is showing encouraging results in the treatment of alcoholics."

Conferences. The Iowa Psychiatric Society has decided to hold its annual scientific meetings in Iowa City, Dr. Huston reports. Two years ago, this program dealt with the legal aspects of psychiatry, and last year it dealt with the current research activities at the Psychopathic Hospital.

Outstanding national conferences have been held in Iowa City on preventive psychiatry and on child psychiatry and child development. The latter of these was sponsored jointly by the American Psychiatric Association and the S.U.I. Department of Psychiatry.

In cooperation with the state hospitals and the Mental Health Association of Iowa, a series of four one-day workshops were held in the four quadrants of the state for the Association of Nursing Home Operators. Their purpose was to assist these operators in the care of mental patients who come to them upon the recommendation of private physicians, from the Board of Control institutions and from other agencies.

Services Provided to the Board of Control. A number of educational services have been provided by the State Psychopathic Hospital to the Board of Control. In the "package plan" residency program previously referred to, psychiatric residents are trained for three years at the Psychopathic Hospital, and obligate themselves to work for two additional years at one of the state institutions. Four such residents are now working in the state mental health institutes.

A Saturday lecture and clinical conference program is presented once each month, and is made available to the staffs of the Board of Control mental institutions. The speakers are national authorities, who talk on the recent developments in psychiatry. The lectures are also mimeographed and distributed to the staffs of the state institutions, to psychiatrists in private practice and to mental health clinics.

Residents from the Independence residency program rotate through the outpatient clinic in Iowa City for additional training, and the staff of the Psychopathic Hospital teach in the residency programs at Independence and at Cherokee.

THE IOWA MENTAL HEALTH AUTHORITY

In 1947, Dr. Huston says, the Legislature designated the Psychopathic Hospital, through its director, as the Iowa Mental Health Authority, to carry out the provisions of Public Law 487, passed by Congress in 1946. Throughout the years, a principal activity of the Mental Health Authority has been the promotion of mental-health education, the conducting of scientific research, and the sponsorship and development of community mental health clinics.

In these clinics, one-half of the patients are chil-

dren. The adult patients, in most instances, have mild mental disorders, not severe enough to require hospitalization. In 1956, there were nine such community mental health centers serving 34 per cent of the state's population; in 1963, there are 12 centers available to 43 per cent of the state's population.

These clinics, Dr. Huston says, have served to attract psychiatrists into private practice in the local communities. They are locally financed, controlled and operated. Of the 20 psychiatrists who work in these clinics, about one-half have had all or part of their training at the Psychopathic Hospital.

Clinic Finances. Dr. Huston explains the financing of the community clinics as follows: One-half of the financial support of each clinic is drawn from county tax funds, a small amount comes from the federal government, and the remainder comes from donations, gifts and fees. Although the clinics were originally set up to do preventive work and to treat mild cases, they are being called upon, more and more, to assist in the post-hospital care of persons discharged from mental hospitals and from institutions for the retarded. In 1961, a series of conferences was held by the Mental Health Authority for representatives of the clinics and the state institutions in order to promote this objective.

"It seems fairly clear," Dr. Huston comments, "that as local interest increases and more psychiatrists become available, new clinics will be organized in other areas of the state. It is hoped that the clinics, together with psychiatrists in private practice, will ultimately carry a greater share of the treatment of mental patients than at present. But even so, in the past several years, IOWA HAS MOVED MORE IN THE DIRECTION OF PRIVATE AND LOCAL CARE THAN HAVE MOST STATES!"

A recent survey shows that over 60 per cent of psychiatric cases in this state are treated by private psychiatrists or in community mental health clinics. Twenty-five per cent are treated at the Board of Control institutions, and the remainder at the State Psychopathic Hospital and by the U. S. Veterans Administration. These percentages exclude patients treated by general practitioners, for whom there are no reliable figures.

The Part Played by the Community Mental Health Clinic. As the Psychopathic Hospital broadened its operations and services and as the Division of Mental Health of the Board of Control implemented its four-point program, the community mental health clinics were of necessity drawn into the over-all plan.

Dr. H. Kosieradzki, a private practitioner of psychiatry and director of the Marshalltown Mental Health Clinic, says: "Progressively, it has been recognized that no one group by itself can cope with the problem. Since 1961, a constant effort has been made to correlate the work of the Board of Control institutions and the Psychopathic Hos-

pital with that of the mental health centers and with private psychiatry. A number of meetings were held to improve communications among them. Consequently, the mental health centers began to accept discharged patients for follow-up care. In this way, the load on the outpatient clinics of the state institutions was decreased, and better facilities were provided for working with the patient and his family in the community where the problem originated."

The stress that the state hospitals placed on voluntary admissions greatly assisted the community mental health clinics in seeking treatment for their patients, Dr. Kosieradzki continues. This eliminated much of the red tape and the objectionable legal aspects formerly associated with admissions. Further, summaries of each case began to pass easily from local physicians to the state hospitals and back again, as the patient was hospitalized and later was returned to his community for after-care.

"In general," he says, "the cooperation among the Board of Control institutions, the Psychopathic Hospital, the mental health centers and the private psychiatrists is better than it has even been. But unless all facilities continue to work hand-in-glove, we shall never effectively combat so huge a problem as that of mental health in Iowa. The advances achieved in such a relatively short time are excellent. However, a great deal of work remains to be done by all of us!"

More and more psychiatrists have entered private practice in the communities of between 20,000 and 30,000 people that were in dire need of such personnel, as a direct result of the efforts of the Psychopathic Hospital and the Iowa Mental Health Authority.

THE MEDICAL SOCIETIES ARE SUPPORTING THIS PROGRAM

Not only has the number of community mental health centers grown, but the smaller communities—in addition to the large cities that had previously established psychiatric facilities—started opening psychiatric units in general hospitals. The establishment of these units was wholeheartedly supported by the local medical societies, as well as by the general population.

How enthusiastically these facilities have been accepted by the communities is shown by some statistics that were recently compiled by the Mental Health Authority, showing that psychiatrists in private practice are increasing their percentages of all patients.

At the present there are nearly 50 psychiatrists in private practice in the State of Iowa, and there are 12 community mental health centers.

Despite these improvements, about 57 per cent of the state's population is still without the services of community mental health clinics. A very large number of citizens in the areas not yet served are unable to pay for private psychiatric treatment. This urgent need is clearly recognized by the Men-

tal Health Authority, and constant efforts are being made to open new clinics in the areas where such facilities are badly needed.

From the financial point of view, it is much sounder to get money from the community for all of these projects, than it is to take it in the form of taxes, send it to the state or federal treasurer and then have it doled back to the community, he commented.

HOW A COMMUNITY MENTAL HEALTH CLINIC SHOULD BE RUN

Each community mental health clinic should have a psychiatrist in charge, and in addition to directing the clinic he should have his own private practice and should have facilities for his use in the local general hospital, Dr. Kosieradzki believes. "In my opinion," he continues, "this should give him an incentive to work efficiently in the clinic. His work would then be judged by the local medical society as well as by the general population—not only his private work, but his achievements in organizing and running the clinic." He is convinced that a clinic will never work out if it does not have the wholehearted support of a cross section of the population of the community, such as the medical societies, bar associations, merchants, farmers, businessmen, clergy, school personnel, etc. "These people should feel that the clinic, as well as the hospital facilities for the care of psychiatric patients, is 'their baby,' so to speak. Then they will do everything in their power to make it grow and become a real treatment center."

A community mental health clinic should never be opened unless a psychiatrist is available to direct it, Dr. Kosieradzki stresses. If these clinics are opened all over the state, however, and if 100 per cent of the population is served by them, the number of private psychiatric facilities will also increase, and hospital units will be opened without duplication of services.

"If these facilities continue to grow at the rate at which they have grown in the past few years, mental illness will cease to be the disgrace and curse that it has been, and will be classed with all other illnesses," Dr. Kosieradzki predicts. "Furthermore, patients will seek help at the beginning of their illness, instead of waiting until they need prolonged hospitalization and until treatment is much more difficult and costly."

"This program can be accomplished only if we are first assured of the complete support of the Iowa Medical Society, of the Iowa Psychiatric Society, of the civic leaders in each community, of citizens throughout the state, and of their representatives in the General Assembly," he concludes.

Clearly, a firm foundation has been laid, a sound structure has been erected, significant progress has been made, and the immediate and long-range goals are clear. But the need is still great!

Iowa is moving ahead in mental health, and with all hands at their stations, mightily motivated, the goal can be reached!

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 4-YEAR-OLD FEMALE child was seen at the University Hospitals because of multiple congenital hemangiomatous lesions of the perineum and left lower extremity, associated with gigantism of the latter extremity. The patient had been the product of a normal pregnancy, labor and delivery, and no other family members had vascular abnormalities. Her general growth, development and level of intelligence had been normal. Amputation of bulbous toes on the left foot had been performed at the age of one year, so that specially constructed shoes could be fitted to the enlarged foot. At the age of three years, to facilitate ambulation, an attempt was made to thrombose enlarged veins on the left foot by injections of sodium morrhuate. Complaints at the time of admission included a recent rapid enlargement of the left foot which precluded fitting a suitable shoe, bleeding from minor trauma to the vascular lesions on the left lower extremity, and occasional passage of gross blood in the stool.

Examination at the time of the first admission revealed a bright and cooperative 4-year-old girl who was slightly pale. There was a blowing, grade II apical systolic heart murmur, a pulse of 125/min. and a blood pressure of 110/80 mm. Hg. No abnormal adenopathy was found. The solid abdominal organs were not enlarged, and there were no palpable abdominal masses or bruits. There were patchy skin lesions irregularly distributed over the left labium majus, low-midline lumbar area, intergluteal fold and left hip, and serpiginously involving the majority of the anterior, posterior and lateral surfaces of the left lower extremity and foot. These lesions were papular and of a verrucous appearance in many areas, and they varied in color from dark red through deep purple. The entire extremity was larger than its counterpart in circumference and length, and contained visibly enlarged vascular channels. The left foot was particularly bulbous and grotesquely enlarged. Anoscopic examination revealed similar vascular abnormalities of the distal rectal mucosa. Dependency of the extremity produced swelling and lividity associated with tachycardia, but there was a quick return to a normal pulse when the ex-

tremity was wrapped and elevated. Blood count, urinalysis, electrocardiogram, chest roentgenogram and cardiac fluoroscopy were all considered within normal limits. Roentgenograms of the lower extremities revealed that the bones on the left side were longer and larger than those on the right, and serpiginous soft-tissue shadows seen on x-ray were interpreted as dilated veins.

Conservative treatment was initiated, consisting of application of a bland ointment to the areas of skin where verrucous scabbing was subject to trauma, and wrapping of the left lower extremity to the groin with elastic bandages when the patient was ambulatory. At the age of five years, transmetatarsal amputation of the left foot was carried out to facilitate fitting a shoe. Later the same year, a large portion of the most severely involved skin and subcutaneous tissue in the neighborhood of the left knee was excised, and was replaced by split-thickness skin grafts. At both of these operative procedures, there was considerable blood loss from myriads of vascular channels which involved deep fascia, and the paradox of slow and poor healing in the face of an abnormally increased blood supply was apparent. Periodically, fulguration of bleeding areas of abnormal mucosa in the rectum and anus was performed.

Serial examinations revealed progression of the hemangiomatous changes of skin and subcutaneous tissue in all the previously described areas. Freshly involved tissue assumed a reddish to purple color, the draining veins became enlarged and tortuous, and after a time the skin surface assumed a verrucous, scabbed appearance which bled following minor trauma. When the child reached the age of six years, excision of several matted conglomerate vessels on the left calf was effected, plus injection of many veins with sclerosing solution and electrocoagulation of many others, in hopes of retarding this progression. Again, slow healing was noted. Cardiac catheterization revealed that when blood was allowed to pool in the left lower extremity, cardiac output decreased by one-third, the mean atrial pressure fell to zero, and the pulse rate increased from 88 to 128 beats per minute. These changes promptly reverted to normal when the extremity was emptied.

In her eighth and final year of life, progression of the hemangiomatous lesions in the lumbar, intergluteal, anal and left hip areas occurred, accompanied by frequent bleeding and ulceration. She was admitted to the hospital for further treatment. Her urinalysis was normal to chemical and microscopic examination. The hemoglobin level was 11 Gm./100 ml., the red blood cell count was 3,970,000/cu. mm., and the white blood cell count was 11,600/cu. mm. A peripheral blood smear was interpreted as normal. A chest roentgenogram was interpreted as normal. When limited surgical excision, electrocoagulation and injection of 25 per cent sucrose solution did not control the process, a major excision of skin and subcutaneous tissue was carried out in the intergluteal and buttocks areas, with replacement by split-thickness skin grafts. The patient tolerated the procedure well, although approximately 1,000 ml. of blood had to be replaced intravenously. Her postoperative condition was stable; she was alert and cooperative; her vital signs were within normal limits; and she resumed oral liquids promptly. Considerable serosanguineous drainage was noted coming from the graft sites, in spite of the voluminous pressure dressings that were applied. She was nursed in a prone position, kept at complete bed rest except when the bed linen was changed, and the left lower extremity was wrapped to the groin with circumferential elastic bandages, as usual. The only abnormality noted was a mild elevation of body temperature. It reached a peak of 102.4° F. on the fourth postoperative day.

On the morning of the fifth postoperative day, she was moved out of bed while the bed linen was changed. She attempted to have a bowel movement into the bed pan without success. She seemed bright, alert and normal in all respects. When returned to bed, she gasped for breath, became cyanotic and apneic, and expired within two minutes' time and before a physician could be summoned.

SUMMARY OF CLINICAL DISCUSSION

Dr. S. E. Ziffren, Surgery: Mr. Murphy will present the discussion for the students.

Mr. Jack Murphy, junior ward clerk: To preclude eponymic chaos, I think it is appropriate at the onset to consider the condition under discussion as one of the so-called congenital dysplastic angiopathies. The history is of progressive hemangiomatous disease in a child with associated hypertrophy of the involved extremity. It is not clear from the protocol whether or not the patient had been normal at birth. Bony and cartilaginous deformity required repeated surgical attacks during the child's life. Similarly, several efforts were undertaken to slow the progression of the vascular component of the disease by injection of sclerosing agents and fulguration, and by excision and skin grafting. These palliative measures were finally

terminated by the patient's death at the age of eight.

Aside from the primary lesions, there is little to suggest multiple congenital anomalies. The blowing, grade II apical systolic heart murmur is best interpreted as functional. Laboratory studies were normal throughout the patient's entire history, with the exception of a borderline leukocytosis of 11,600 cells, and a lower-limit-of-normal hemoglobin value of 11 Gm. noted on the final admission.

Many eponymic and descriptive names have been applied to the condition or syndrome of systemic hemangiomata and limb hypertrophy, and I shall forego listing them. However, one outstanding example should be mentioned. In 1881, Maffucci described a condition of hemangioma and dyschondroplasia. Although Maffucci's syndrome is an attractive possibility, it is, we believe, ruled out on the basis of at least two considerations—first, that the bony and cartilaginous disturbance of the case in question resulted in relative gigantism of the involved extremity whereas Maffucci's disorder produces a dwarfing; and second, that many unique patterns of radiopacity and radiolucency of the bone apparent by x-ray in Maffucci's syndrome are not mentioned as having been noted in this patient. Finally, patients with Maffucci's syndrome are usually normal at birth, and this point is not entirely clear in the present case.

My colleagues and I think that the diagnosis is hemangiectatic hypertrophy of the limb, as described by Weber in 1918. This couples two concepts, one of dysplastic or invasive vascular hamartoma or neoplasm of a congenital nature, and the other of bone overgrowth secondary to increased local blood supply. The terminal event, in our opinion, was a clear-cut, textbook case of pulmonary embolism secondary to phlebothrombosis, especially since there was such an abundant reservoir for venous stasis and clot formation. The episode of elevated temperature on the patient's fourth postoperative day could have represented wound infection, thrombophlebitis, pneumonitis or a multitude of other possibilities.

Our diagnosis is hemangiectatic hypertrophy. At necropsy, we expect that the following were found: (1) pulmonary embolism, (2) cavernous hemangiomata of the left lower extremity and sclerosis of the arteries supplying this region, and (3) hypertrophic bone in the involved area.

Dr. Ziffren: Thank you. Dr. Tidrick will carry on the discussion.

Dr. R. T. Tidrick, Surgery: I have no desire to go back over the ground that has been covered by Mr. Murphy and his colleagues. I hope that we have instilled in him some loathing for the confusion that "the eponymic disease" has conferred on this group of anomalies or instances of hamartomatous development. The reference he has made to Weber's 1918 paper is important, and

clearly fits the general type of association of limb overgrowth and bizarre, confused, purposeless, hamartomatous vascular maldevelopment both of extremities and viscera.

However, there are many points that can be made in relation to some of these other entities or associations that have been named. Our colleague, Dr. Bean, has been a student of this subject for many years, and in the course of the afternoon he may make some remarks. These should be of interest to us largely because we wish to sharpen our boundaries of recognition and to do a better job of suggesting prognosis.

Our concepts of what may be going on and of what the basic lesions are composed need clarification. It would appear that the difficulty is basically the abnormal opening of pre-existing or pre-formed shunts, principally at the level that interconnects arteries, arterioles, veins, venules and lymphatics. This abnormality, and whatever mediates it, are responsible for the abnormal dilatation and neoplastic-like tendency to invade and replace tissues.

Now I shall show a series of slides which display the development of this process in the child under discussion. Beginning at four years of age when she was first seen, she had several toes amputated. The foot was grotesquely enlarged, and the toes were club-like. However, one would hesitate to say there was basically any cartilaginous difficulty. This was not the type of change one sees in characteristic Maffucci's disease. At least in my concept, hers was an orderly skeletal growth. We have been struck time and again, in following patients with hypertrophied limbs by the fact that the process tends to be more severe in the lateral aspect of the limb, and that there is a tendency for midline and visceral involvement. Several of the children with this disorder had involvement of the external genitalia. As can be seen, the lateral aspect shows some of the warty areas. Frequently there is a peculiar butterfly-like distribution over the lateral aspects of the thigh. The warty angiomata may develop very rapidly and cause much distressing ulceration and bleeding.

This next slide shows another little fellow with the same deformity. He had a terminal event similar to that of the girl who is being discussed today. We have studied his autopsy findings in detail. He was a year older at the time we first saw him, but there are striking similarities between their cases. In each instance there was a grotesquely hypertrophied extremity. The roentgenograms showed some flaring of the metaphyses, but orderly epiphyseal plates and lines, rather than the osteochondromatous variety that is seen in some other variants. Now let us consider the dilated vessels. What do they contain? What are they? These huge pools contained clear lymph.

Here demonstrated is another child—a little

older—who, incidentally, was seen and followed by the same physician who attended the little girl we are presenting today. The surgeon performed modified Kondoleon procedures on this lower extremity, and to a large extent controlled the abnormal vessels in the extremity until the process began to progress at the margins. This is a view of another patient who had a modified Kondoleon procedure and amputation of the grotesque toes. This slide shows a large communication that comes off an arterial trunk leading out to a racemose aneurysm or snarl of thin-walled, vein-like structures. This view shows a huge thin-walled saccular area of venous ectasia. We have attempted to study these lesions by various means. One technic, developed by Dr. J. A. Gius and associates, shows an area excised from the left thigh of the little girl under discussion today. The margins have been oversewn, and a latex injection demonstrates tremendous vessels, presumably veins.

Figure 1 is a photograph of the limb of the child under discussion today, taken two years before her last operation. She developed alimentary-tract bleeding and chronic anemia. Anoscopic and proctoscopic examination revealed a warty, friable, hemorrhoid-like mass, principally at the level of the internal hemorrhoidal plexus. The first development over the sacrum was removed and fulgu-



Figure 1. The limb of the child under discussion, photographed two years before her final operation.

rated some years ago. There was a recurrence. Figure 2 shows the appearance some six months before her death. The areas of coaptation in the buttocks developed this roostercomb-like, verrucous angiomatous mass, which bled on trivial trauma. There was increased prominence of all of the vessels, both lymphatic and venule, in the skin. These were excised, but they recurred promptly, and four months later the problem of bleeding was again severe. Re-excision was done. Three months later there was a recurrence once more, and progression at the margins, with more and more bleeding. A wide excision was done at the last operation, all of the supplying vessels were dissected down to deep fascia and muscle, and a primary split-skin graft was applied.



Figure 2. Appearance of the buttocks, six months before the patient's death.

Dr. F. W. Stamler, Pathology: Dr. Tidrick has described this child's basic difficulty very well and has illustrated it by means of gross photographs. My chief contribution will be to give the microscopic counterpart to the picture that Dr. Tidrick has presented.

As has been recognized, this was a case of extensive vascular malformation—presumably of congenital origin, although apparently progressive in nature—with localized gigantism or hypertrophy of an extremity, and with visceral involvement. Death resulted from pulmonary embolism, as has been postulated.

One question remains, and it concerns the exact source of the embolus. Some of the cavernous abnormal venous structures in the pelvic region were thrombosed, and may have been the source of the pulmonary embolus. Also, there was mural thrombosis of the heart, principally of the right auricle and auricular appendage. This could have served equally well as the source of the pulmonary embolism. There was no obvious reason for this cardiac mural thrombosis. It was a very bland, non-

inflammatory appearing thrombus, but was quite definite. The angiomatous lesion that was present was an extremely extensive one, involving a number of internal viscera including the pelvic organs, the adrenals and spleen. It was of a mixed type, with numerous large cavernous spaces, but with considerable capillary angiomatous growth, and also with rather prominent lymph-angiomatous structures, so that I should classify it as a hemolymphangioma.

The photographs to be shown were selected to illustrate the abnormal vascularity of various organs and tissues. The skin was involved in two ways. Some portions showed only dermal thickening and epidermal papillation, without direct angiomatous involvement. In other areas the cavernous, thin-walled vessels extended throughout the dermis, and it was in these areas that slight trauma to the overlying dermal verrucae might have been expected to cause hemorrhage. Some of these thin-walled vessels contained blood, but others were filled with lymph (Figure 3).

The subcutaneous tissues and underlying muscles also contained many cavernous vessels filled with blood or lymph (Figure 4). Loose areolar tissue was found in the interstices between vessels. Numerous small vessels and endothelial buds were present in these interstitial areas.

The vessels in the involved areas showed many abnormalities. This was true even of the major arteries, which tended to show a disorderly growth pattern. Large bundles of smooth muscle had formed walls about irregular lumens. In many instances the elastic lamellae were incomplete, and the distinction between arteries and veins was not clearly defined. In some areas, portions of the same abnormal vessels had the structure of arteries, but other portions resembled veins, and yet other portions resembled neither, but consisted merely of a cavernous space lined with endothelium (Figure 5). These vascular structures undoubtedly functioned as arteriovenous shunts, although one could not very often demonstrate a definite point of arteriovenous communication.

The apparent proliferation of vascular channels through endothelial budding and canalization was another feature of the vascular anomaly seen in this case. This phenomenon is illustrated in the next photograph (Figure 6). Here were found many small vessels, some of which appeared normal, but many of which showed irregular proliferation of endothelium to form incompletely canalized vascular buds.

The vascular anomalies shown to involve the left lower extremity so extensively were found at autopsy to involve the rectum, uterus and clitoris, urinary bladder and perivesical tissues, adrenal glands, and spleen in a similar fashion. Numerous small foci of hemorrhage found throughout both lungs were not associated with any demonstrable pulmonary vascular malformations, but were ap-

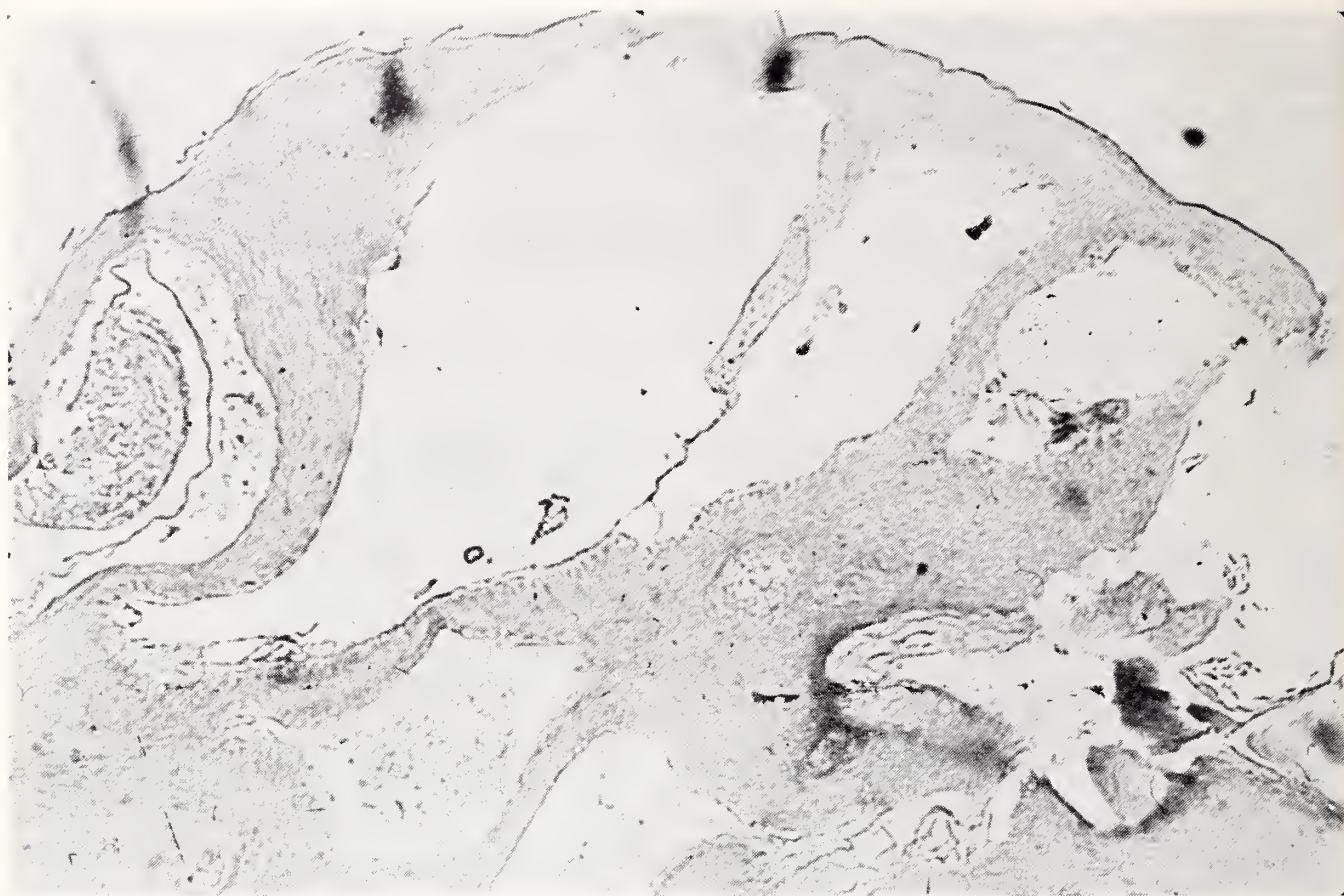


Figure 3. Angiomatous involvement of skin. Photomicrograph shows cavernous vessels containing blood or lymph in dermis beneath hypertrophic papillated epidermis.

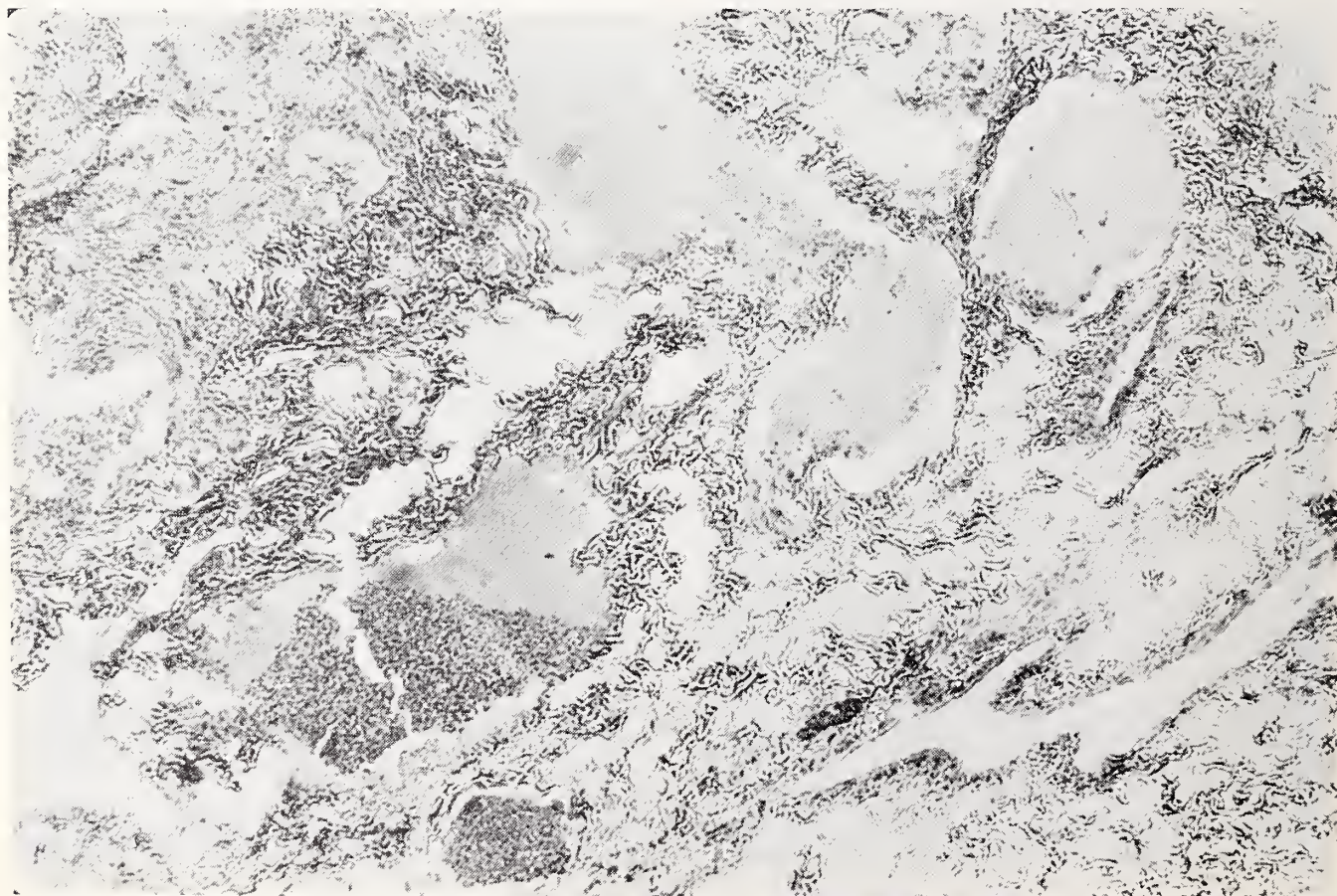


Figure 4. Subcutaneous angiomatous malformation. Photomicrograph of cavernous vascular structures filled with blood or lymph, with interstitial loose areolar tissue.

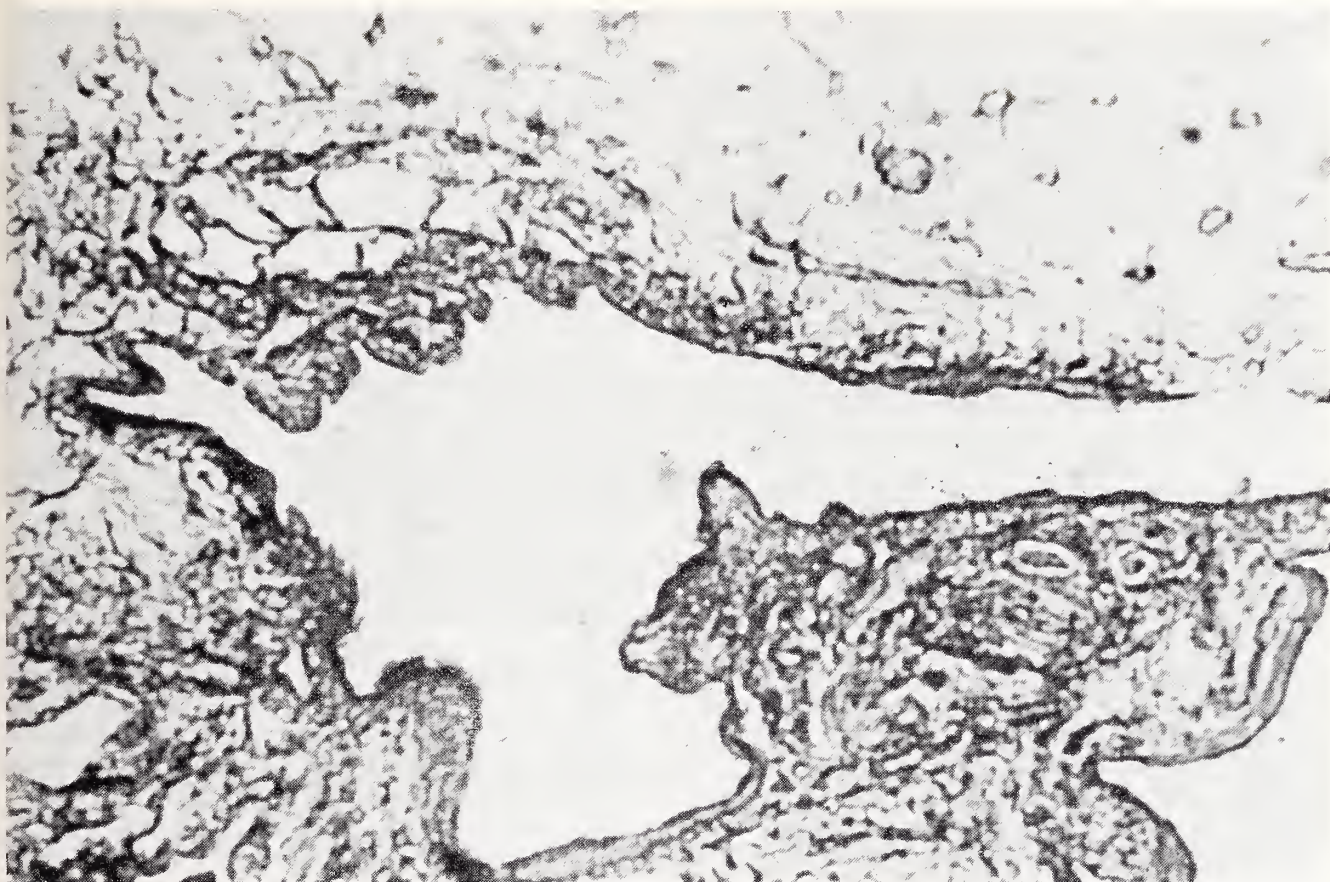


Figure 5. Photomicrograph of large, malformed vessel having partially the structure of an artery and partially that of a vein.

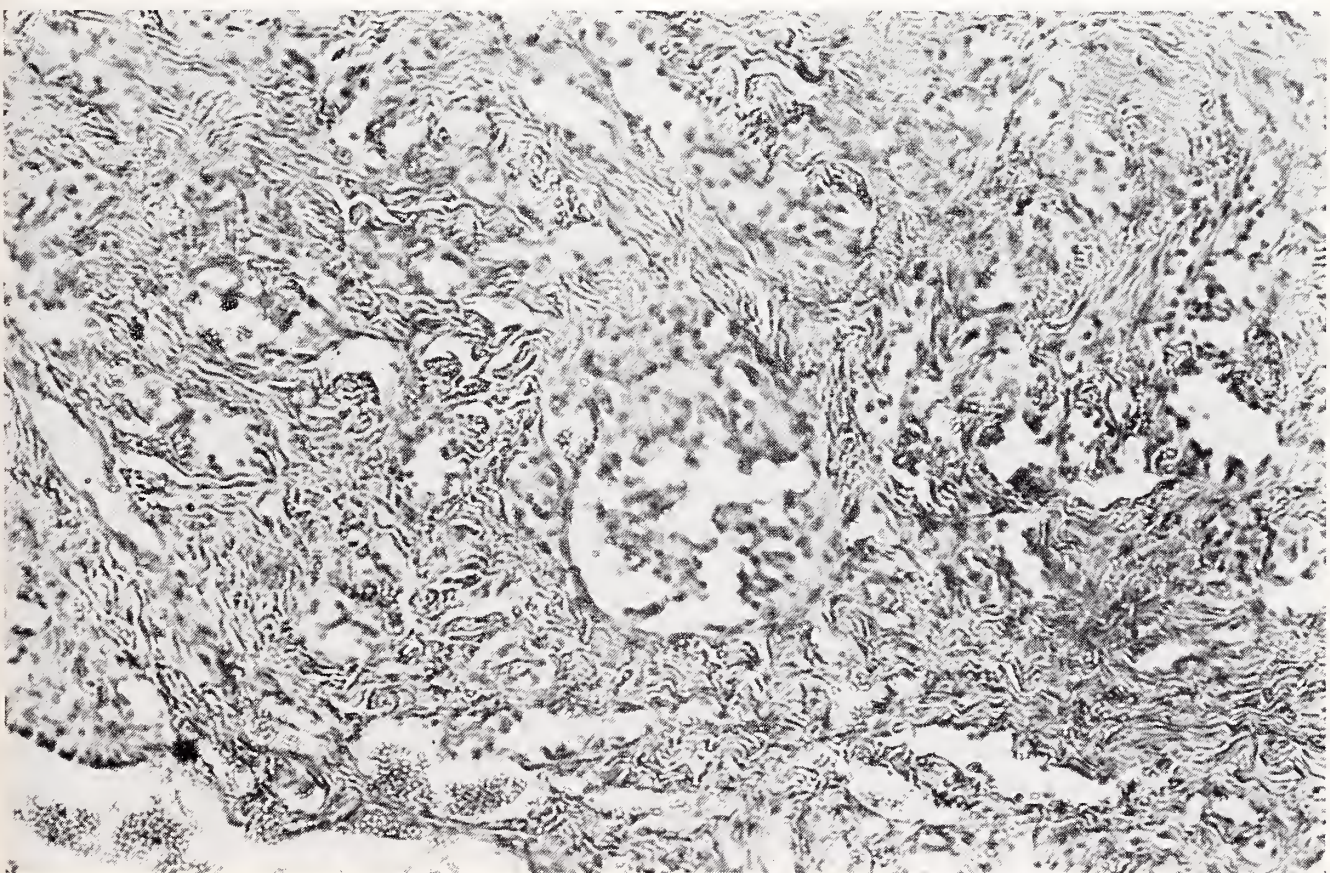


Figure 6. Photomicrograph showing active endolethelial proliferation, with early canalization of new vascular channels.

parently the result of circulatory disturbances produced by pulmonary embolism.

So, we see, the microscopic picture is a rather complex one involving the presence or proliferation of vascular structures of arterial, of venous, and of capillary types, and many which do not clearly fit into any of these categories, but simply are the result of abnormal vascular proliferation. One of the questions which we should like to answer is whether this was all on a congenital basis, or whether it was truly progressive, as it appeared to be in this case. I think basically it was a congenital malformation, but it is certain that clinically the lesion progressed. The progression may have been due in large part to an opening up or canalization of vascular channels, but I think it is indicated by some of the more cellular areas that there actually was new growth of vascular structures. We should not be amazed that this should occur, even though this was not a progressive neoplastic disease. Vascular proliferation occurs under a wide variety of stimuli, such as inflammation or the proliferation of nutrient vessels supplying a neoplasm. The tissue proliferation that occurs under abnormal circulatory conditions of various sorts may stimulate a new growth of vessels, and I think that we might logically postulate that in a patient such as this one, the abnormal circulation itself may stimulate the growth of new vessels, just as it stimulates overgrowth of the part involved.

Dr. E. O. Theilen, Internal Medicine: Dr. Stamler, may I ask you to what extent the left ventricle was hypertrophied, if at all?

Dr. Stamler: This was a rather surprising aspect of this case in view of the history of cardiac difficulty. There was no appreciable cardiac hypertrophy. The heart was of normal size for a child of the patient's size.

Dr. Theilen: Were there any old obliterative lesions in the smaller branches of the pulmonary arteries?

Dr. Stamler: None of any significance was found.

Dr. Ziffren: Are there any other questions you want to direct to Dr. Stamler? Dr. Keller, did you have some roentgenograms?

Dr. John Keller, Radiology: My first slide shows merely the different sizes of the two legs. The left one is considerably longer, and the bone itself is wider and denser than the one on the other side. On the radiograph one can see serpiginous areas of increased density in the soft tissues, thought to be enlarged veins. The next slide is very similar to one of Dr. Tidrick's that showed a different patient. You can see the very large increase in size in the soft tissues of the left foot, and the actual bone destruction on the terminal end, presumably by pressure from the hemangiomatous lesions.

Dr. Ziffren: It is my understanding, Dr. Eck-

stein, that you ran some cardiac output studies on this child. Would you discuss them please?

Dr. John W. Eckstein, Internal Medicine: Patients with this disease often go into congestive heart failure in later life. Several years ago, Dr. Tidrick and I began a series of hemodynamic studies on younger patients to obtain a better understanding of the load placed on the circulation. In the protocol it was stated that heart rate increased when the girl stood up, and that she became tired and weak if she had to stand without external support to her leg. We think these symptoms are related to a pooling of blood in the large abnormal vessels. I should point out that most of the blood in the body is contained in the veins. The veins are thin-walled, and they distend easily. If a subject stands after being in the supine position, there is a tendency for blood to pool in the lower part of the body. This tends to reduce filling pressure in the right atrium. If this were reduced enough, the ventricle would fill improperly, and cardiac output might be restricted. Restriction of the amount of blood pumped into the arteries would lead to a fall in arterial pressure. This is the sort of thing that happens when patients stand quietly. Soldiers who faint during parades suffer reduced cardiac output secondary to pooling.

The body normally compensates for a threatened fall in cardiac output in several ways. When the patient stands, there is reflex venous constriction. The smooth muscle in the walls of the veins tends to tighten up to support the blood columns and prevent pooling. In normal veins there are valves which break up the hydrostatic columns and prevent distention. A threatened fall in cardiac output also leads to a sympathetic discharge which causes peripheral arterial constriction, tachycardia, and an increase in ventricular function. It would appear that the tachycardia in this patient was a reflex adjustment to pooling, and that orthostatic weakness and the fall in blood pressure represented a failure of the reflex mechanisms to completely compensate for the pooling. Our laboratory studies were done in an effort to document the clinical evidence.

We measured blood flow in the left leg and in the right leg by means of plethysmographs. We found that the actual rate of flow was not greatly increased in the diseased leg, when compared with the good leg. For this reason, we would be reluctant to say there was a significant degree of functional arteriovenous communication in the diseased leg. With arteriovenous communications, we expect the flow to be quite sharply increased. We also compared the distensibility of the blood vessels in the right leg with the distensibility of the vessels in the left leg, by employing the plethysmographic method which provides us with pressure-volume curves for the veins. We found that at a distending pressure of 30 mm. Hg, the veins of the right leg contained about 3.5 cc. of blood per

100 cc. of limb volume. In the diseased limb, there was about 17 cc. per 100 cc. if the veins were distended by pressure of 30 mm. Hg. It is obvious that the vessels in the diseased limb were much more distensible. For this reason, blood could pool in them much more easily when the pressure in them increased because of the change to the upright position. We feel that enough blood pooled to cause the symptoms that the patient experienced when she stood up. We tried several crude stimuli which ordinarily produce venous constriction, but the veins in the left leg did not respond to these constrictor stimuli as they did in the normal leg.

On another occasion, we put a catheter into the right atrium and a needle into a peripheral artery. We injected green dye so that we could measure cardiac output and calculate the volume of blood between the right atrium and the needle. We also measured the atrial or the filling pressure of the heart, the arterial pressure, and the heart rate. After we had established the control measurements, we inflated a cuff high on the left thigh to a pressure which produced the same pressure that the girl would have in the veins of the leg when she stood. We were causing blood to pool by this maneuver. When we put the cuff on the left thigh, enough blood pooled so that the right atrial pressure fell from about 5 mm. Hg to nearly atmospheric pressure. At the same time, the heart rate increased from about 90 to 128 beats per minute. The cardiac output fell from about 3 L./min. to about 1.6 L./min. because of the reduced filling of the ventricle. Arterial pressure stayed about the same. The peripheral arterial constriction apparently maintained blood pressure, even though output fell. The central blood volume also fell with cuffing of the left leg. When the cuff was removed, it returned to the control value. There was also an overshoot in atrial pressure, the heart rate slowed and cardiac output was restored. The changes were all much smaller when we put the cuff on the good leg.

The reflex changes which compensate for pooling are of the same sort as those which occur during muscular exercise, at least as far as the heart is concerned. We might look upon this girl as having had an excess demand on her heart whenever she was in the upright position. If the pooling were not prevented with the elastic stocking which Dr. Tidrick used, there might have been a continuous demand on the heart that could lead to muscular hypertrophy. This may contribute to the cardiac failure which some patients develop as they become older.

Dr. Ziffren: Dr. Zellweger, would you care to make any comments?

Dr. H. Zellweger, Pediatrics: It is well known that some hemangiomatic lesions are inherited. Some varieties of generalized telangiectasia—in

particular Osler-Rendu's hereditary hemorrhagic telangiectasia—follow an autosomal dominant mode of inheritance. Yet von Klippel-Trenaunay's disease, or vascular osteohypertrophic nevus, as well as Maffucci's disease are non-familial and non-hereditary conditions. This should be kept in mind in eugenic counseling. (Congenital or postnatal lymphedema or Milroy's disease, which has a certain resemblance to the above conditions, occasionally affects more than one member of a family.)

Since human cytogenetics took an unprecedented upswing, it has become customary to suspect a chromosomal aberration as the cause of any unusual condition. Hayward and Bower found 47 chromosomes with a supernumerary small acrocentric chromosome in Sturge-Weber-Kalischer's disease, a condition in which facial, cranial and intracranial vascular malformations are associated with convulsions, hemiparesis and mental retardation. Other investigations, including my own, have not confirmed the findings of Hayward and Bower. Patan has suggested the possibility of a partial trisomy G which is not always microscopically recognizable. A chromosomal anomaly has not been found in von Klippel-Trenaunay's or in Maffucci's syndrome. We were able to study one case of both conditions, and both revealed normal chromosomal complements.

Dr. Ziffren: Dr. Bean, do you have any comments?

Dr. W. B. Bean, Internal Medicine: After hearing the learned discourses of the undergraduate student, Mr. Jack Murphy, and the distinguished comments of the faculty, all I can do is gild the lily. The names which have been used really are a travesty. They are perfectly astonishing and it might be of interest to regale you with some of them. This sort of lesion is usually called the von Klippel-Trenaunay syndrome, after the eighth and ninth persons who described it. This illustrates one of the laws of eponyms—that the first person to report does not get the credit; usually the condition is named for someone down the line. The next point I should like to make is that Dr. Parkes Weber, who was of German descent, liked to have his name pronounced "Vāber" rather than "Webber." He died this past June, in his hundredth year. He was quite alert and still excreting things into the medical literature right up to the time he died. His name, with those of Sturge and Kalischer, is attached to this disorder when it affects the cutaneous realm of the trigeminal nerve or one of its branches, together with an underlying meningeal vascular anomaly with alternations in the brain, and commonly with mental retardation or convulsive seizures. This condition has been treated somewhat ineffectively by surgical attacks; apparently there is not very much you can do for it.

The simple birthmark—the port wine stain which commonly exists on the face, or at least it

is most conspicuous there—is confined to the skin and the vessels in the immediately adjoining subcutaneous space. When the vascular anomaly is very much more extensive, it falls into the group which is illustrated here, the congenital dysplastic angiectases.¹ If anyone prefers to call something “the Sturge-Weber-Kalischer syndrome” rather than “congenital dysplastic angiectasis,” I have no objection. Part of the understanding of these conditions has been missed because people dealing with the head, face and brain haven’t realized that the hemangiectatic hypertrophy of a limb with this associated vascular lesion is precisely the same kind of thing. If we move further, we find a hamartomatous, dyschondroplastic and vascular anomaly in Maffucci’s syndrome with the same kind of dyschondroplasia as in Ollier’s disease, plus hamartomas and hemangiomas. What is important is that the hemangioma is not necessarily connected geographically with the trouble in cartilage and bone, as it is in the hemangiectatic hypertrophy of bone such as we’ve seen in the case today. That too is a congenital but not, apparently, an inherited anomaly. There are examples of people with this condition who have married and had children, and there are no examples, so far as I know, where either a sibling, a parent or a child of a patient has been affected. As Dr. Zellweger has pointed out, the chromosomal arrangements in Maffucci’s syndrome, in so far as the preliminary studies have gone, are perfectly normal.

There is a form of localized gigantism, and Dr. Peterson and I reported such a case three years ago in a man with a monstrous middle finger. This was a perfectly normal finger that was much longer and had at least twice the circumference of its mate on the opposite hand. This man happened to be a bartender, and he took advantage of his developmental anomaly. He was able to get a very sturdy, steady grip on bottles and glasses and attracted considerable business through his extraordinary ability to flip them down the bar. There is no indication there was anything wrong with his underlying bone or the vascular structures.

Why is it that we all do not have either gross asymmetries or peculiar distortions in our arrangements? What are the governors that cause nature to turn off the phenomenon of growth at a given and particular time so that, in general, our feet and our hands are mates, even though the two sides of our faces are a little bit asymmetrical? Nobody really knows. Growth is not properly controlled in such things as the wildly erratic growth of malignant neoplasms, the somewhat more controlled growth of benign neoplasms, and the strange proliferative growth of this peculiar and promiscuous inosculation of lymphatic and vascular structures with anomalies in the bone which may arise from no more complex a cause than an increase in profusion of blood vessels or a sort of

super-irrigation. No one truly understands the causes. The notion that developmental anomalies may exist in a plastic state should be recalled. Osler’s disease or hereditary hemorrhagic telangiectasia, in which there is a tendency to bleed because the little blood vessels of the body don’t have enough elastic or muscle tissue in them, is characterized by lesions which vary as time goes on. Lesions disappear, new ones appear, and others may remain stable at least for 10 to 12 years. When new blood vessels develop, they may have this same defect. Rapid local vascular proliferation was very vividly displayed in the recurrence of lesions in the perianal and coccygeal regions in this patient whom we have discussed today. Presumably this same plastic state must exist. The anomaly in the formation of new blood vessels, although presumably congenital in origin, is potentially a progressive process.

It seems to me that our understanding of this cruel anomaly has suffered because it has been obscured as a result of its lurking in a multitude of eponymic hiding places. We should bring the great variety of lesions together under the general heading of congenital dysplastic angiectasis.

One further point I should like to make is that occasionally someone who has had relatively little trouble from these lesions may develop a tremendous number of phleboliths in middle age. Also, over a long period of time he can repeatedly flip off small emboli, and occasionally small rocks which lodge in the lungs. He may develop congestive failure because he has acquired cor pulmonale, with tremendous enlargement of the right ventricle, and he may indeed die of the slow progression of this disease. Multiple miliary emboli or the multiple transmission of rocks through the vascular bed into the lung ultimately obstruct the space for blood to get through the lungs, rather than bring about the final, catastrophic event of pulmonary embolism which seems to have been the situation here.

Dr. Ziffren: Dr. Tidrick, do you have any further comment you would like to make?

Dr. Tidrick: It may be apropos, in connection with these remarks that Dr. Bean has made, to review three or four lantern slides of a patient whose lesion went in the other direction. These slides are of an infant in the first week of life. There was a rapidly progressing angiomatous lesion of leg and foot, and Dr. Warner and colleagues will remember it well, for they puzzled over the biopsies. It was rapidly growing. An inguinal lymph node demonstrated involvement with the same process. This next view is a photomicrograph of what was considered a typical area. Dr. Warner, do you have any comments?

Dr. E. D. Warner, Pathology: This is rapidly proliferating growth of endothelial cells. The capil-

lary spaces are poorly formed. It can be classified as a hemangio-endothelioma.

Dr. Tidrick: The prognosis, of course, might be considered very bad. Five months later and seven years later, as we see in these photographs, there was no visible trace of the disorder. No excisional or radiation treatment was given.

ANATOMICAL DIAGNOSES

Pulmonary thrombo-embolism, massive, with focal pulmonary hemorrhage

Lympho-hemangiomatous malformation, left lower extremity, buttocks, rectum, clitoris, uterus, urinary bladder, adrenals, and spleen

Gigantism, left lower extremity, due to vascular hamartomatosis

Thrombosis, recent, pelvic veins
Mural thrombosis, recent, right atrium and ventricle

Post-operative status, transmetatarsal amputa-

tion, left foot, and excision of vascular malformation of buttocks, partial

STUDENTS' DIAGNOSES

Hemangiectatic hypertrophy of lower extremity
Cavernous hemangiomata of left lower extremity and sclerosis of arteries to limb
Pulmonary embolus
Hypertrophic bones of leg

CLINICAL DIAGNOSES

Hemangio-lymphomatous malformation of lower extremity, buttocks and rectum
Pulmonary embolus

REFERENCE

1. Bean, W. B.: "Congenital Dysplastic Angiopathies of the Skin and Underlying Tissues." Vascular Spiders and Related Lesions of the Skin. Springfield, Illinois, Charles C Thomas, pages 157-161.

Coming Meetings

IOWA	
Mar. 9	Second Annual Orthopaedic and Rehabilitation Seminar. Younker Memorial Rehabilitation Center, Des Moines
Mar. 12-13	Hernia (S.U.I. Department of Surgery). Medical Amphitheater, University Hospitals, Iowa City
Mar. 27	Infertility and Endocrinology (S.U.I. College of Medicine). University Hospitals, Iowa City
Apr. 7-10	Annual Meeting of the Iowa Medical Society. Fort Des Moines Hotel, Des Moines
Apr. 12-13	Pediatric Conference (Raymond Blank Memorial Hospital for Children). Des Moines
Apr. 25 and May 2	Third Annual General Practitioners' Seminar (Mental Health Institute and Iowa Chapter AAGP). Mental Health Institute, Independence
Apr. 26-27	"Creative Approaches to Environmental Stress-es"—the Fourth Institute on Preventive Psychiatry (S.U.I. Preventive Psychiatry Committee). Iowa City
CONTINENTAL U. S.	
Mar. 1-2	Operable Heart Disease. Presbyterian Medical Center, San Francisco
Mar. 2-3	Multiple Injuries and Trauma. University of California, San Francisco
Mar. 3-7	Thirty-first Annual Alumni Postgraduate Convention of Loma Linda University School of Medicine. White Memorial Medical Center, Los Angeles
Mar. 4-7	Twenty-sixth Annual Meeting of the New Orleans Graduate Medical Assembly. Roosevelt Hotel, New Orleans
Mar. 4-8	Physical Methodology in Medical Research (American College of Physicians). Massachusetts Institute of Technology, Cambridge
Mar. 4-8	Surgery of Colon and Rectum. Cook County Graduate School of Medicine, Chicago
Mar. 4-15	Basic Internal Medicine. Cook County Graduate School of Medicine, Chicago
Mar. 4-15	Board of Surgery Review, Part II. Cook County Graduate School of Medicine, Chicago
Mar. 7-8	Trauma From Birth to Death (UCLA School of Medicine). California Medical Association's West Coast Counties Institute. Del Monte Lodge, Pebble Beach, California
Mar. 8-9	National Medicolegal Symposium (AMA). Americana Hotel, Miami Beach, Florida
Mar. 9	Office Diagnosis. Presbyterian Medical Center, San Francisco
Mar. 9	Sectional Meeting of the American College of Physicians. Fontenelle Hotel, Omaha
Mar. 11-13	Gallbladder Surgery. Cook County Graduate School of Medicine, Chicago
Mar. 11-13	Pediatrics (University of Kansas Medical Center). Battenfeld Auditorium, Kansas City, Kansas
Mar. 11-13	Clinical Reviews (Mayo Clinic and the Mayo Foundation for Medical Education and Research). Theater, Mayo Civic Auditorium, Rochester
Mar. 11-14	Sectional Meeting for Doctors and Nurses (American College of Surgeons). Penn-Sheraton and Pittsburgh Hilton Hotels, Pittsburgh
Mar. 11-22	Obstetrics, General and Surgical. Cook County Graduate School of Medicine, Chicago
Mar. 12-14	Gynecologic Problems in Private Practice. Medical College of Georgia, Augusta
Mar. 12-14	American Academy of Allergy. The Queen Elizabeth Hotel, Montreal, Canada
Mar. 13-17	Diagnostic Radiology. University of California, San Francisco
Mar. 14-15	Gastroenterology. University of Nebraska College of Medicine, Omaha
Mar. 14-16	Surgery of Hernia. Cook County Graduate School of Medicine, Chicago
Mar. 16-17	Cancer. Presbyterian Medical Center, San Francisco
Mar. 16-21	Fifteenth Annual Teaching Seminar of the International Academy of Proctology. Las Vegas, Nevada
Mar. 17-22	American College of Allergists. New York
Mar. 18	Spring Hospital Workshops (Kansas City Southwest Clinical Society in cooperation with the hospitals of Greater Kansas City and the Kansas City Chapter of the AAGP).
Mar. 18-19	Cardiac Auscultation. University of Kansas School of Medicine, Kansas City, Kansas
Mar. 18-20	Clinical Reviews (Mayo Clinic and Mayo Foundation for Medical Education and Research). Theater, Mayo Civic Auditorium, Rochester
Mar. 18-21	American Industrial Health Conference. Sheraton Park Hotel, Washington, D.C.
Mar. 18-22	Electrocardiography. Cook County Graduate School of Medicine, Chicago
Mar. 18-22	Recent Advances in Cardiovascular Disease (American College of Physicians). Mount Sinai Hospital, New York City
Mar. 18-29	Basic Principles in General Surgery. Cook County Graduate School of Medicine, Chicago
Mar. 19	Venous Disorders of the Extremities (Neosho County Medical Society and the University of Kansas School of Medicine). The Southeast Kansas Tuberculosis Hospital, Chanute

- Mar. 21-22 **Third Annual Convention of the International College of Applied Nutrition**. Huntington-Sheraton Hotel, Pasadena, California
- Mar. 22-23 **The Broadening Scope of Psychosomatic Medicine**. UCLA, Los Angeles
- Mar. 22-23 **The Broadening Scope of Psychosomatic Medicine**. University of California at Los Angeles
- Mar. 23 **Fractures**. Presbyterian Medical Center, San Francisco
- Mar. 24-27 **Annual Session of the California Medical Association**. Ambassador Hotel, Los Angeles
- Mar. 24-27 **Missouri State Medical Association's Annual Meeting**. Kansas City
- Mar. 24-28 **International Anesthesia Research Society**. Americana Hotel, Bal Harbour, Florida
- Mar. 24-29 **American College of Allergists Graduate Instructional Course and 19th Annual Congress**. Americana of New York, New York City
- Mar. 25-29 **Vaginal Approach to Pelvic Surgery**. Cook County Graduate School of Medicine, Chicago
- Mar. 25-29 **Lower Extremities Prosthetics**. UCLA, Los Angeles
- Mar. 27-28 **Practical Aspects of Difficult Endocrine Problems (University of Southern California)**. Los Angeles County Hospital, Los Angeles
- Mar. 28 **Obstetrics and Gynecology**. University of Nebraska College of Medicine, Omaha
- Mar. 28-29 **International Symposium on the Evolution of the Atherosclerotic Plaque**. Palmer House, Chicago
- Mar. 28-30 **Fourth Oklahoma Colloquy on Advances in Medicine: Pulmonary Insufficiency (Oklahoma Tuberculosis Association)**. University of Oklahoma Medical Center Auditorium, Oklahoma City
- Mar. 29-31 **American Society of Internal Medicine**. Denver
- Mar. 29-Apr. 5 **American Academy of General Practice**. Chicago
- Mar. 30-31 **Pediatrics, Obstetrics, Gynecology, Surgery (UCLA)**. Cedars of Lebanon Hospital, Los Angeles
- Apr. 1-4 **"Perspective in Medicine"—15th Annual Scientific Assembly of the AAGP**. McCormick Place, Chicago
- Apr. 1-4 **American Radium Society**. Mark Hopkins Hotel, San Francisco
- Apr. 1-5 **Forty-fourth Annual Session of the American College of Physicians**. Municipal Auditorium and Denver Hilton and Brown Palace Hotels, Denver
- Apr. 1-5 **Thirty-sixth Annual Spring Congress in Ophthalmology and Otolaryngology (The Gill Memorial Eye, Ear and Throat Hospital)**. Roanoke, Virginia
- Apr. 1-12 **Gynecology, Office and Operative**. Cook County Graduate School of Medicine, Chicago
- Apr. 3-5 **American Surgical Association**. Westward Ho Hotel, Phoenix
- Apr. 3-5 **Highlights of Modern Ophthalmology**. Presbyterian Medical Center, San Francisco
- Apr. 5-6 **"Farm and Home Safety—A Community Problem"—National Rural Safety Conference (AMA Council on Rural Health in cooperation with the National Safety Council, national farm organizations and allied health groups)**. Drake Hotel, Chicago
- Apr. 6 **Minor Surgery: Office and Hospital**. Presbyterian Medical Center, San Francisco
- Apr. 8-10 **American Association for Thoracic Surgery**. Shamrock Hotel, Houston
- Apr. 8-12 **Board of Internal Medicine Review, Part II**. Cook County Graduate School of Medicine, Chicago
- Apr. 9-11 **American Association of Anatomists**. Shoreham Hotel, Washington, D. C.
- Apr. 9-13 **American College of Preventive Medicine**. Philadelphia
- Apr. 15-16 **Pediatrics**. University of Nebraska College of Medicine, Omaha
- Apr. 15-17 **The Theory and Practice of Auscultation—Ninth Symposium sponsored by Hahnemann Medical College and Hospital**. Sheraton Hotel, Philadelphia
- Apr. 16 **Practical Aids in Diagnosis of Hemorrhagic Disorders (Neosho County Medical Society and the University of Kansas School of Medicine)**. The Southeast Kansas Tuberculosis Hospital, Chanute
- Apr. 16-19 **American Dermatological Association**. Homestead, Hot Springs, Virginia
- Apr. 16-20 **American Physiological Society**. Ambassador Hotel, Atlantic City, New Jersey
- Apr. 16-21 **American Association of Immunologists**. Traymore Hotel, Atlantic City
- Apr. 18-20 **General Surgery**. University of California, San Francisco
- Apr. 18-20 **American Association of Railway Surgeons**. Drake Hotel, Chicago
- Apr. 21-22 **American Laryngological Association**. Hollywood Beach Hotel, Hollywood, Florida
- Apr. 21-24 **American College of Obstetricians and Gynecologists**. Statler Hilton Hotel, New York City
- Apr. 21-25 **International College of Surgeons—North American Federation**. Ambassador Hotel, Los Angeles
- Apr. 22-24 **American Academy of Pediatrics**. Statler Hilton Hotel, Los Angeles
- Apr. 22-24 **Anesthesiology**. University of Kansas School of Medicine, Kansas City, Kansas
- Apr. 22-27 **American Academy of Neurology**. Leamington Hotel, Minneapolis
- Apr. 23-24 **American Broncho-Esophagological Association**. Hollywood Beach Hotel, Hollywood, Florida
- Apr. 23-25 **American Laryngological, Rhinological and Otolological Society**. Hollywood Beach Hotel, Hollywood, Florida
- Apr. 23-26 **American College Health Association**. Muehlebach Hotel, Kansas City
- Apr. 24-27 **Seventh Postgraduate Course in Trauma (Chicago Committee on Trauma of the American College of Surgeons)**. John B. Murphy Auditorium, Chicago
- Apr. 26-27 **American Otolological Society**. Hollywood Beach Hotel, Hollywood, Florida
- Apr. 26-28 **Recent Advances in Pediatrics, Neurology and Hematology**. University of California, San Francisco
- Apr. 26-28 **American Association of Pathologists and Bacteriologists**. Netherlands Hilton Hotel, Cincinnati
- Apr. 27-28 **The Narcotics Problem**. University of California, Los Angeles
- Apr. 27-28 **American Psychosomatic Society**. Haddon Hall, Atlantic City
- Apr. 28-May 1 **Expanded Surgery of the Nasal Septum and Closely Related Structures (Department of Otolaryngology with the cooperation of the American Rhinologic Society)**. Medical College of Virginia, Richmond
- Apr. 28-May 3 **American Society of Abdominal Surgeons**. New York City
- Apr. 29-30 **General Surgery and Trauma**. University of Nebraska College of Medicine, Omaha
- Apr. 29-May 2 **Aerospace Medical Association**. Statler Hilton Hotel, Los Angeles
- Apr. 29-May 3 **Upper Extremities Prosthetics**. UCLA
- Apr. 29-May 3 **The Medical Care of the Adolescent (Harvard Medical School)**. Children's Hospital Medical Center, Boston
- Apr. 30-May 1 **Association of American Physicians**. Chalfonte-Haddon Hall, Atlantic City
- Apr. 30-May 1 **Endocrine Society**. Atlantic City

ABROAD

- Mar. 16-Apr. 7 **Clinical Postgraduate Program in Israel and Greece (UCLA in cooperation with Hebrew University Hadassah Medical School, Tel-Hashomer Hospital and Beilinson Hospital)**. Jerusalem and Tel Aviv, Israel; Athens and Epidaurus, Greece. Write: Continuing Education in Medicine and Health Sciences, UCLA Medical Center, Los Angeles 24
- Apr. 12-May 4 **Clinical Postgraduate Program in Japan and Hong Kong (UCLA in cooperation with Tokyo University School of Medicine, the Atomic Bomb Casualty Commission at Hiroshima, Hong Kong University School of Medicine and the Hong Kong Department of Health)**. Write: Continuing Education in Medicine and Health Sciences, UCLA Medical Center, Los Angeles 24
- Apr. 16-24 **International Meeting on Foreign Immunology, Medicine and Pathology (3rd), and International Meeting on Forensic Immunology and Toxicology (1st)**. London. Write: Joseph W. Spelman, M.D., Philadelphia Dept. of Public Health, 13th and Wood Streets, Philadelphia 7

(Continued on page xxxi)



Discipline and the Child

A book entitled, *SUMMERHILL, A RADICAL APPROACH TO CHILD REARING*, by A. S. Neill,* now in its fifth printing, is provocative reading. The author, the son of a Scotch schoolmaster, established a private coeducational school in southern England 40 years ago, based on the principles of "freedom and non-repression without reservation." The school is operated under a true children's government, in which the bosses are the children themselves. In his book, the author describes the functioning of this unusual school and projects his extremely unconventional and liberal philosophy of child management.

Neill has the conviction that children are inherently good and innately wise and realistic, and if provided with a loving environment without parental discipline, most of the troubles of childhood will be taken care of. "There is no need whatsoever to teach children how to behave," he maintains. "A child will learn what is right and what is wrong in good time—provided he is not pressured." It is his contention that neurosis begins with parental discipline, which is the very opposite of parental love.

The author is a firm believer in self-regulation which means the right of a baby to live freely, without outside authority in things psychic and somatic. For a child brought up in a home where self-regulation has existed from the start, he contends that the ordinary needs for discipline just do not occur.

The basic philosophy of rearing children and the basic principles under which Summerhill School is operated, as Neill expresses them, are as follows: "I believe that to impose anything by authority is wrong. The child should not do anything until he comes to the opinion—his own opinion—that it should be done. The curse of humanity is the external compulsion, whether it comes from the Pope or the state or the teacher or the parent. It is fascism in toto."

At Summerhill School, lessons are optional. Children can attend classes or stay away from them—even for years, if they choose to do so. It is felt that children with innate ability who wish to become scholars will become scholars on their own

initiative if freed from adult authority or compulsion. Ordinary conventions are discarded, children dress as they choose, smoke if they desire, swear if they like, use "four-letter words" with impunity, experiment with sex play without criticism or wise counsel. This is in a boarding school with 25 boys and 20 girls, age 5 to 15 years on admission. Religion plays no part at Summerhill School. According to the author "The New Religion will be based on knowledge of self and acceptance of self." This Cult of Self is the antithesis of the stern religion of his Scotch ancestors.

The surprising fact is that Summerhill School has continued to operate for forty years, and according to the author's story it has operated successfully. Some of the graduates have attended college and have become successful and responsible citizens.

Summerhill School is an interesting sociologic and psychological experiment, but it can have little practical application because of its radical nature. The basic philosophy of the school and of the rearing of children is an expression of protest, a push of the pendulum to the end of its arc by an individualist who seemingly interprets Freud as he chooses to support his extreme doctrine.

The security of discipline is as essential to the child as is the security of affection, and without it the individual cannot attain the self-discipline which is fundamental to his developing an integrated personality. Discipline means "to make a disciple of." It is determined, for the most part, by parental precept and example, and this responsibility is inescapable. Parents cannot relinquish their responsibility to others. Discipline is not just the imposition of authority, or the antithesis of love, as Neill contends, but is rather training in self-control, in considering the welfare of others, in learning "the rules of the game." One of its objectives is to teach respect for authority, and respect for authority must be earned. Firmness, consistency and fairness, applied with common sense and tempered with a generous measure of affection, can accomplish these objectives in a wholesome and natural way, and constitute the sane approach to child rearing. A child must have discipline if he is to acquire the restraint and the respect he must have if he is to protect himself from being hurt by the numerous forces and elements about him. If, in the process, discipline does something to his little ego and id, it still is worthwhile, for it may spare his life or save him from serious injury. And it might even have a salutary effect on his psyche.

Unfortunate is the child who attains adulthood flaunting convention and indoctrinated with the Cult of Self. Deprived of religious training or convictions, he faces life alone, without those spiritual resources which help make the rough places smooth and which give meaning to life and to death.

* Neill, A. S.: *Summerhill, a Radical Approach to Child Rearing*. New York, Hart Publishing Co. Inc.

Preparation of the Herniorrhaphy Patient

In a report from the Emory University Department of Surgery and Grady Memorial Hospital, Atlanta, Martin and Stone* have reported that the incidence of recurrence of inguinal hernia after primary repair has been reduced from 8.6 per cent during the years 1949-1959, to 2.0 per cent during the succeeding 10-year period. The authors attribute this improvement to an adequate preparation of the patient before subjecting him to the operation.

The Atlanta report consisted of a study of the hospital records of patients with inguinal hernia over a 13-year period ending December 31, 1960. During that period a diagnosis of recurrent inguinal hernia was made on 166 occasions, in 128 patients. Thirty of these were not repaired because of one or more contraindications. The remaining 136 patients were operated upon, and 19.1 per cent of these developed another recurrence. During this same 13-year period, 2,751 primary inguinal herniorrhaphies were performed. In a 77 per cent follow-up of at least one year, recurrence was noted in 101 cases, or 3.8 per cent. An additional 65 recurrent hernias had been repaired initially, prior to the onset of the study, or had been operated upon elsewhere.

The objective of the study was to determine the cause of recurrence and not necessarily to substantiate the superiority of any one type of operation. The real purpose was to determine the importance of factors which increase intra-abdominal pressure and which appear to predispose to recurrence. Special attention was also given to errors of operative technic and to wound complications.

In the group of 136 cases of recurrent hernia in the 128 patients studied, the initial herniorrhaphy had been done at an average age of 41.5 years. The patients' ages varied from 6 weeks to 83 years, but the majority were in the fourth, fifth and sixth decades. There were 122 males and six females, and an equal distribution between Caucasians and Negroes. The majority of the patients were required to do heavy manual work in their occupations. Careful scrutiny of the case records showed that in 36 per cent of the patients, chronic cough was present and exertional dyspnea was a prominent symptom, due to either chronic lung disease or chronic congestive failure or both. The bearing-down strain of voiding was present in 35 per cent of the group, the result of lower urinary tract obstruction or cystitis. Either one or both of these causes of increased intra-abdominal pressure were present in 52 per cent of the cases. Less frequent causes were chronic constipation, anorectal disease, multiple pregnancies, and ascites.

* Martin, J. D., Jr., and Stone, H. H.: Recurrent inguinal hernia. *Ann. Surg.*, 156:713-718, (Nov.) 1962.

The original herniorrhaphies had been done as emergency operations in 18 patients. The operation had been bilateral in one-third of the group. The majority of repairs had been of the McVay or Bassini type. High ligation of the sac had been performed in 91 per cent of the operations. Silk or cotton sutures had been used in all but seven of the cases. Postoperative complications had occurred in 27 per cent; wound complications had developed in 21 per cent, evenly divided between abscess, hematoma, and cellulitis; and other complications had consisted of fever of undetermined origin, acute exacerbation of a chronic lung disease, and prolonged adynamic ileus.

Of the recurrences, 46 per cent were noted within one year, and within five years in 77 per cent of the cases. The recurrence was an indirect hernia in 77 per cent, and both direct and indirect in 4 per cent. In 20 patients, the recurrence was found to be sliding hernia, and in 16 of these it had not been detected at the initial operation.

Repair of the recurrent hernia was an emergency procedure in 10 patients. General anesthesia was employed in 36 cases, five were done under local anesthesia, and the rest under spinal anesthesia. At operation, the tissues were found to be moderately to extensively scarred in 72 per cent of the patients, and in six cases it was impossible to find adequate fascia for repair. High ligation of the sac was performed in 87 per cent of the patients. A McVay closure was preferred, and was used in 71 per cent, a Bassini method in 19 per cent, and the Ferguson and Halsted operations in 5 per cent of the cases, each. Tantalum mesh was employed in 10 patients, and fascia lata in one.

Following repair of the recurrent hernia, complications occurred in one-third of the cases, but no deaths followed as a result of the operation. The resultant difficulties were principally wound complications: abscess in 13 per cent, cellulitis in 11 per cent, and hematoma in 6 per cent. A fecal fistula developed in one patient, but it closed spontaneously.

Careful consideration of the 166 recurrent hernias led the authors to the conclusion that three groups of factors appeared to be responsible, either partly or completely, for the recurrence. These factors consisted of (1) improper evaluation and preparation of the patient; (2) errors in operative technic; and (3) postoperative complications.

It was the opinion of the Atlanta group that the errors in preoperative conditions can be controlled, at least partially, and a few of them can be eliminated entirely. Operation should be deferred until the causes of increased intra-abdominal pressure, as have been described, can be relieved or minimized. By this means, the recurrence rate at Grady Memorial Hospital had been reduced from 8.6 per cent during the period from 1948-50, to 2.0 per cent during the last 10 years.

An anatomical reason for the recurrence was

found in 23 per cent of the recurrences. However, it was thought that it was not the operative error alone which had resulted in recurrence. The combination of factors was significant. In 72 cases, it was concluded that there had been insufficient tightening of the internal ring.

Wound complication occurred in 21 per cent of those who had recurrences, as compared to 9.0 per cent for the total 13 years of hernia experience. The local complications were judged to have been the result of some operative error. They consisted of hematoma, cellulitis or abscess, and as a result, the scar or fascial closure was inferior. Other postoperative complications which seemed to favor recurrence were prolonged abdominal distention secondary to dynamic ileus, and intermittent stress on the suture line, such as is produced by acute exacerbation of lower urinary tract obstruction, or pulmonary disease with paroxysms of coughing.

The authors conclude: "In general, no single type of hernia repair appears to be superior to any other for all inguinal hernias. Each has its place in the surgeon's armamentarium. With due consideration to anatomy and physical status, better results are obtained by selective use and careful application in the preoperatively well-prepared patient."

Let's Urge Youngsters Not to Smoke

The subject of cigarette smoking and health has occupied an increasing amount of attention in the medical literature, and though it is still a controversial subject, the majority of articles indicate that serious diseases occur with much greater frequency in the smoker than in the non-smoker, and that smoking results in an increase in mortality rates.

In a recent article entitled "One Physician's Philosophy About Smoking," Dr. David T. Carr¹ of the Mayo Clinic, calls the cigarette habit "physiologic folly," and says that it quite properly can be called "playing respiratory roulette." This probably represents the average physician's attitude concerning the hazards of cigarette smoking, though he may not have expressed it so honestly and succinctly as Dr. Carr.

A report on smoking and health was published in 1961 by the Royal College of Physicians,² under the chairmanship of Sir Robert Platt. The report concludes: "The most reasonable conclusions from all of the evidence on the association between smoking and disease are: that cigarette smoking is the most likely cause of the recent world-wide increase in deaths from lung cancer—that it is an important predisposing cause of the development of chronic bronchitis, in the absence of which morbidity and mortality from this common disease would be substantially reduced. Cigarette smoking probably increases the risk of dying from coronary heart disease, particularly in middle age. Smoking

of any kind may increase symptoms due to arterial disease of the heart or limbs and possibly promotes its development and progression. It does not appear that smoking causes gastric or duodenal ulcer but there is clear evidence that it has an adverse effect on the healing of these ulcers. Smoking pipes and cigars appears to be associated with far less risk than cigarette smoking."

According to the British report, "There can, of course, be no question of prohibiting a habit which most smokers enjoy, without injury to health, but the amount of ill-health and shortening of life attributable to smoking is now so great that means must be sought to reduce the vast and increasing prevalence of the habit. At present both social custom and commercial pressure outbid the voice of caution, and the balance must be redressed."

The report of the Royal College is available in a paperback booklet of some 50 pages,² and can be purchased at a cost less than that of one pack of cigarettes. This is a subject of vital concern to the physician and his patients, and the information in this report should be in the hands of every physician in the land.

In September, 1962, the Board of Regents of the American College of Chest Physicians addressed a letter³ to the editors of the medical journals in this country on the subject of cigarette smoking. The letter stated, "The members of the Board of Regents of the College are convinced that sufficient evidence has been accumulated to warrant issuing an official statement with regard to cigarette smoking and health." The following resolution was approved by the Board of Regents and issued by the College: "The weight of scientific evidence distinctly indicates that cigarette smoking and the inhalation of other atmospheric pollutants have an association which strongly suggests a causal connection with chronic bronchitis, pulmonary emphysema, cor pulmonale, cardiovascular diseases and cancer of the lung." The group urged its members and the medical profession in general to intensify their educational campaign directed toward the public, and youth in particular, relative to the hazards of smoking.

On the other side of the fence, one of the most vocal, in criticism of the various surveys which have indicated an association of smoking and disease and increased mortality, has been Joseph Berkson, a statistician at the Mayo Clinic. In his argument on the subject⁴ he states: "The question of the cause of cancer is basically a biologic and not a statistical problem, and statistical conclusions would have to be fully corroborated by experimental and direct observational studies before they could be considered to have been scientifically established."

He continues: "There was, in fact, virtually no substantial clinical, pathologic, or other independent direct evidence that smoking was the cause of cancer of the lung." Berkson contends that the

data are unreliable, and that the association between smoking and lung cancer is a spurious statistical phenomenon. He postulates that persons who do not smoke or who are relatively mild smokers are constitutionally disposed to longevity, and therefore to generally low death rates, and that the disposition not to smoke is a reflection of that constitution.

Surgeon General Luther L. Terry has appointed a 10-member advisory committee on smoking and health, and a report from this group is expected within eight months. The surgeon general is quoted as saying, "I expect it to be the most comprehensive ever to be produced on the subject of smoking and health," and it is hoped that this report will resolve some of the controversy on the subject.

The time has come when the individual physician cannot evade the issue. It is his obligation to weigh the evidence and to come to some conclusion on the subject. If he is a "smoker," he must consider his obligation to himself and to his family. He owes it to his patients to project the truth about the hazards of smoking, according to present day evidence, and to urge a wise decision by the patient.

However the controversy regarding smoking and disease may eventually be decided, cigarettes certainly offer nothing constructive, and young people should be persuaded not to start using them. Thus, the medical profession in general should undertake a vigorous campaign among the youth of America, pointing out the folly and the potential hazards of the smoking of cigarettes.

REFERENCES

1. Carr, David T.: One Physician's Philosophy About Smoking. *New Physician* 11:298-299, (Sept.) 1962.
2. Smoking and Health, a Summary and Report of the Royal College of Physicians of London in Relation to Cancer of the Lung and Other Diseases. New York, Pitman Publishing Corporation.
3. Letter dated Sept. 11, 1962, from Murray Kornfield, executive director, 112 East Chestnut St., Chicago 11, Illinois.
4. Berkson, J.: Statistical investigation of smoking and cancer of lung, *Proc. Staff Meetings, Mayo Clinic*, 34:206-224, (April. 15) 1959.

Iowa Thoracic Society

George N. Bedell, M.D., Iowa City, president of the Iowa Thoracic Society, invites all Iowa physicians to attend the hospitality hour, dinner and medical program of the organization's annual meeting, at Hotel Savery, Des Moines on Wednesday, April 3.

The business meeting and election of officers and executive committee members will be held from 4 to 5:30 p.m. The hospitality hour will follow the business meeting and a smorgasbord dinner will be at 6:30. The medical program will begin at 7:30.

Two medical papers will be presented on topics to be announced.

Richard P. Jahn, M.D., Milwaukee, Wisconsin, president of the Wisconsin Thoracic Society and president of the Mississippi Valley Trudeau Society, is scheduled to speak.

The chairman of the program committee is Ian Maclean Smith, M.D., Iowa City. Others on the committee are Ralph A. Dorner, M.D., Des Moines, and Gerald Keohen, M.D., Dubuque.

Dinner reservations should be sent to the Iowa Thoracic Society, 1818 High Street, Des Moines 14. Spouses are invited.

Of Wisdom and Foolishness in Government

The time of year is rapidly approaching when the average citizen must pay the first installment of his 1963 federal income tax, make final settlement of his 1962 federal income tax, pay his state income tax, and further deplete his funds by paying his personal property and real estate taxes for both his business and his personal accounts.

For the amount each citizen pays in taxes, he should receive from the various governmental agencies a generous return. The one thing each tax payer, be he Democrat or Republican, asks and is entitled to, is an honest, wise and thrifty use of the tax dollars, and unfortunately the citizen is not thoroughly convinced that this is being done.

A few days after the rise in postal rates, a postman who has a delivery route in a suburban area rang a doorbell and announced that he had come to collect "one cent due" on a letter. When asked if this were not a great nuisance to him, he replied, "No." It seems that on that particular day he had 30 "one cent due" letters, and the additional time required to collect the 30 cents would give him \$4.00 in overtime pay! This same experience was being shared by carriers in every community in the land. Spending \$4.00 to collect 30 cents, or \$40.00 to collect \$3.00, or \$400.00 to collect \$30.00 is not an example of wise expenditure of public funds. If this practice is typical of the business acumen of the postal service, the enormous deficits are fully understandable.

The proposed federal budget of over \$98 billion, and the anticipated deficit of over \$11 billion smack of "will o' the wisp" financing, and the reduction in corporate and individual taxes in the face of an \$11 billion deficit somehow has overtones of political economics. If an office, a business or a household were operated in such a manner, immediate legal action would be taken by the various tax agencies.

If Uncle Sam, as a businessman, approached Dillon, Read & Co., applied for additional financing and presented a financial statement of that sort,

what would be the character of the firm's response? Annual deficits for 12 successive years, a proposed unprecedented expenditure and a voluntary reduction in income—these items certainly would not qualify Uncle Sam for a loan. Moreover, a recent and huge increase in the federal payroll would not inspire Dillon, Read's confidence in his skill as a manager. Proposals for a wide expansion of welfare benefits which are unnecessary and economically unsound, and proposed plant expansion under the existing conditions, moreover, would not be received with much favor.

There is not a successful corporation or business in the land which has not had to adopt rigid economies when circumstances demanded them, and to institute every possible retrenchment to preserve solvency and to meet competition. Every household is called upon to live frugally when confronted with any strain on the budget.

With spending in the billions, it is certain that by intelligent management and the exercise of old-fashioned thrift, a reduction of 10 per cent or more could be accomplished without jeopardy by each branch of the federal government. It is time for the American citizen to demand of government the same integrity, the same thrift, the same fiscal responsibility, which government expects of the citizen.

Whether or not the basic issue is one of a difference in political philosophy between the Democratic and Republican parties, the voters should demand, from the elected representatives of both parties, the preservation of those principles which made this country great and which prompted our forefathers to migrate to this country. If we are to preserve the integrity of the United States and to maintain its respected place in the community of nations, we must keep our own house in order. Not until the citizens of this country clamor for it, will deficit spending come to an end. Spending ourselves rich is an utter fallacy!

Withdrawal of Staff Privileges

Two recent news reports concerning the failure of a hospital to renew the staff privileges of a physician are of great interest to the medical profession, and are properly a cause for great concern.

In Pecos, Texas, the administration of Reeves County Hospital, the only hospital in the community, notified Dr. John Dunn by letter that his staff privileges were not being renewed as of January 1, 1963. No hearing was held, no charges were made, and no just cause was given. The letter to Dr. Dunn stated, "We feel that you are well aware of the strained relations between yourself and professional employees of the hospital." The doctor seeks an injunction against the hospital. Back in 1960, in a letter addressed to the FBI, Dr. Dunn had been one of the first persons to question the

Billie Sol Estes' dealings in mortgages on anhydrous ammonia fertilizer tanks.

In San Francisco, Dr. Stanford W. Ascherman, a surgeon, has filed suit against four hospitals and several medical societies in consequence of his dismissal from the staffs of the four hospitals. Also named as defendants are the San Francisco Medical Society, the American Society of Internal Medicine and its executive director, and the American Mutual Liability Insurance Company, which had refused to renew the doctor's malpractice insurance. In his suit, the doctor alleges that the hospitals and the medical groups conspired to injure and destroy him in the exercise of his profession because he supported the President's "medicare" bill, and challenged the right of the Society of Internal Medicine and its director to lobby against the bill. He also alleges that the plaintiffs attempted to suppress his non-conformity and opposition.

It is difficult to believe that the two physicians were denied staff privileges for the reasons implied in the news reports, and without an opportunity for a proper hearing, which is the right of all free men. The facts and the true causes will be brought out in the courts of law. Withdrawal of staff privileges is a serious matter, for it deprives a physician of his livelihood and jeopardizes his professional status in the community. As a consequence, it also deprives the patient to some extent, of free choice of physician. Arbitrary denial and McCarthyism have no place in the hospital-doctor relationship.

Hospital administrators, with the approval of the board of trustees of the hospital, should have the right to withdraw staff privileges for *JUST* cause, if it is in the best interests of the patients and the hospital, but only after a proper hearing. The medical staff should have the responsibility of recommending denial of staff privileges to the hospital administration for *JUST* professional cause, but again only after a thorough hearing. In the well-run hospital, the decision will be reached jointly by the administration and the professional staffs. It is understandable that rules and regulations in a closed-staff hospital may vary considerably from those in an open-staff or community hospital, but the same basic principles should obtain.

It is to be hoped that the rapport between the American Hospital Association and the American Medical Association is of such a character that an agreement on this subject can be reached which will assure justice to all. The primary considerations are the welfare of the patient, the guarantee of justice, and the preservation of the patient's free choice of physician. The integrity of the hospital must be protected, and that integrity is the serious concern of the professional staff as well as of the hospital administration.

President's Page

Every member physician, I hope, will make an effort to attend the IMS Annual Meeting, at Hotel Fort Des Moines, April 7-10.

The complete program appears on pages 113 to 127, in this issue of the JOURNAL.

Having the entire program in downtown Des Moines once more, we feel, will eliminate some transportation problems, make it easier for doctors to renew old acquaintances, and of course, save some money for the Society.

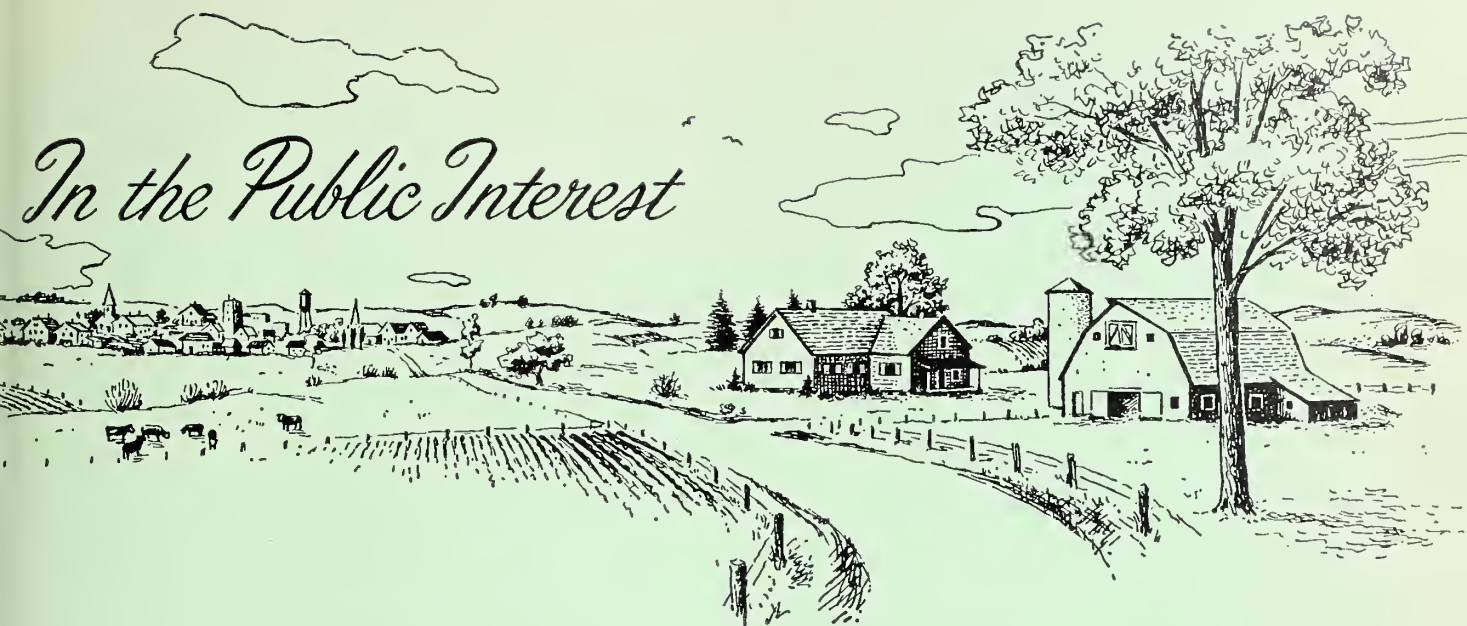
Medical authorities from other parts of the country, as well as from Iowa, will participate in the scientific discussions, and the Program Committee has spent considerable time and effort in arranging discussions of socio-economic subjects.

So as to make the fullest use of the time available, panel discussions have been scheduled for the noon hours on Monday and Tuesday, so that doctors can "lunch and learn." The meetings of the House of Delegates, on Sunday and Wednesday, will be open to all members, and all of them are encouraged to attend. Specialty group dinners will be held on Monday evening. On Tuesday evening, everyone is urged to attend the annual banquet of the IMS, and the Woman's Auxiliary benefit dance.

If you can't spend four days at the annual meeting, spend one day; if you can't spend one day, spend a few hours. You will find it well worth your time.

A handwritten signature in cursive script, reading "George H. Scanlon". The signature is fluid and elegant, with a large initial "G" and a stylized "H".

President



In the Public Interest

The General Assembly of Iowa Has Been Asked to Enact A Composite Board of Medical Licensure

Because a majority of osteopathic physicians and surgeons now practice a scientific medicine which closely resembles or is identical with that practiced by doctors of medicine, it has seemed logical that Iowa should have a single board to examine and license all persons who are qualified to enter either profession.

The proposal for a composite board for this state originated with the Iowa Society of Osteopathic Physicians and Surgeons. The House of Delegates of the Iowa Medical Society approved the idea, and directed the IMS Osteopathic Committee to work out the details of such an arrangement with ISOPS and with the State Board of Medical Examiners. Thus the Composite Board Bill came into being, and it has been introduced in the 1963 General Assembly as S.F.194 and H.F.378.

PRINCIPAL POINTS IN THE PROPOSAL

The major features of the Composite Board arrangement, if enacted into law, will be as follows:

1. The present board of medical examiners and the board of osteopathic examiners will be combined into a single board as the state agency for issuing licenses for (a) medicine and surgery, (b) osteopathic medicine and surgery, and (c) osteopathy.

2. The new panel, to be called the Board of Medical Examiners, will have six members, rather than five. The terms of the five M.D. members are to be five years each, and the term of the O.P.&S. member will be three years. The osteopathic physicians and surgeons and the doctors of osteopathy presently licensed in Iowa total about 450, whereas

the doctors of medicine currently practicing in Iowa number approximately 2,796. Thus the ratio is slightly less than one to six.

3. All individuals currently licensed to practice "osteopathy and surgery" will receive licenses to practice "osteopathic medicine and surgery," and the scope of practice afforded them will be identical with that accorded to medical doctors under Chapter 148, Code 1962.

4. The Composite Board will grant renewal licenses to those presently licensed as osteopathic physicians, and the new law will neither add to nor detract from the practice rights that they currently enjoy. However, no new licenses of that sort will be issued, except by reciprocity or endorsement to osteopaths who have been so licensed in other states prior to the effective date of this act, and who choose to move to Iowa.

5. Future graduates of colleges of osteopathic medicine and surgery cannot be licensed as osteopathic physicians, but will be eligible for licensure as osteopathic physicians and surgeons. They will take the same examination that is given to graduates of medical schools, and like the recently-graduated M.D.'s they will be required to take a one-year internship. Anyone holding a license as an osteopathic physician can qualify for an unlimited license as an O.P.&S., if he wishes, either by taking two additional years of formal training, or by taking a year of additional class work and a year of internship, as many of his associates have done in the recent past.

6. The act will require that all applicants for licensure be graduates of schools which are ap-

proved by the Board, and that their internship training must be taken at institutions approved by the Board. The law will specifically provide that both osteopathic schools and osteopathic internship programs which are now approved by the American Osteopathic Association are to stand as provisionally approved by the Board until 1968, unless a majority of the Board, including the osteopathic member, votes disapproval.

7. The act will authorize the Board to revoke or suspend the license of any physician who, after notice and hearing, has been found guilty of "unprofessional conduct" as defined in the Code, and any such decision of the Board will be subject to review by the courts. It should be noted that the licenses of doctors of medicine have been subject to suspension or revocation by the same procedures and for the same cause, and that the previously existing arrangement is merely being extended to cover the osteopaths.

8. The act increases the *per diem* of members of all examining boards from \$10 to \$25. It also increases the examination fee from \$25 to \$50, and raises the fee for licensure by reciprocal agreement or by endorsement from \$50 to \$100. It raises the annual renewal fee from \$3 for medical licenses and \$1 for osteopathic licenses, to \$5 for either.

9. As many others of the professional examining boards have been allowed to do for some time, the new Composite Board will be permitted to retain the moneys it collects and to pay its expenses from those receipts, rather than being required to remit all fees to the state's general fund and to pay its expenses from a biennial appropriation voted by the General Assembly. At the end of each year, all moneys in excess of \$25,000 will go to the state treasury.

S.F. 194 AND H.F. 378 DESERVE UNANIMOUS SUPPORT

Conversations leading to the present proposal were initiated by the president of the Iowa Society of Osteopathic Physicians and Surgeons five years ago, when he wrote to the president of the Iowa Medical Society to suggest that the two organizations establish a joint committee for the discussion of mutual problems. The resultant group, known as the MD/DO Liaison Committee, has held numerous meetings during the past four years. Until the summer of 1962, the IMS resisted the notion that the two examining boards be combined. Then, in response to its inquiries, it received letters from the composite boards in all 16 states which have them, indicating approval—and in some instances

enthusiasm—for the arrangement. Serious negotiations concerning composite-board legislation began in the fall of 1962, and in January, 1963, both ISOPS and IMS officially approved the provisions that are now contained in S.F.194 and H.F.378.

Every effort has been made to inform the members of both ISOPS and IMS about the negotiations, as they progressed, and about the provisions of the Composite-Board proposal. Nevertheless, a small group of osteopaths reacted unfavorably to S.F.194 just after it was filed, and immediately circularized other members of their profession, giving them incomplete information about the bill and urging them to write to their legislators in opposition to it. Thus, several legislators have received letters objecting unjustifiedly to a sound measure that deserves the united support of the osteopathic profession, the medical profession and the public.

ISOPS conducted full discussions of the Composite Board proposal at its regional meetings last fall, and currently it is conducting another series of meetings throughout the state so as to give every member of that Society a second opportunity to understand the provisions fully and to express his views concerning them. The first two of these gatherings have been held, and with just one exception, all of those present reaffirmed their support of the measure. The Iowa Medical Society commends the Iowa Society of Osteopathic Physicians and Surgeons for taking this prompt action. IMS will not press for the passage of this bill if it is, in fact, opposed by a large number of osteopathic physicians and of osteopathic physicians and surgeons, for it has no desire to force the measure upon a reluctant osteopathic profession. It seems certain, however, that the bill will have the support of a large majority of both osteopathic groups, and in that case the IMS will press for its enactment.

CONCLUSION

The Composite Board Bill is the result of an effort, made in good faith, to promote greater cooperation between the medical and the osteopathic professions, and to improve the quality of medical care available to the people of Iowa. In addition, its enactment is likely to increase the numbers of physicians who will establish practices in this state.

It will be most unfortunate if this legislation fails of adoption in time for the 1963 graduating classes to take advantage of its provisions.

Testimonial Dinner for Dr. Paul



Dr. William D. Paul, professor of physical medicine and rehabilitation at the State University of Iowa College of Medicine, was honored at a testimonial dinner in the Hotel Fort Des Moines, Des Moines, on February 12, for 35 years of study and research in rheumatology. About 400 persons, including Governor Harold Hughes and numerous members of the General Assembly, attended. The dinner climaxed the annual meeting of the Iowa Chapter of the Arthritis and Rheumatism Foundation.

Testimonial letters and telegrams from numerous national and international leaders were read. The senders included President Kennedy, ex-presidents Eisenhower and Truman, and prominent medical men and women throughout the country. In the address of the evening, Dr. Paul reviewed progress that has been made in the diagnosis and treatment of arthritis over the period in which he has been active in the field.

The Arthritis and Rheumatism Foundation had offered to provide the necessary funds, and Dr. Robert C. Hardin, dean of the SUI College of Medicine, announced that a fellowship in rheumatology is being established at the University in Dr. Paul's name.

A number of awards were presented by the Iowa Chapter of the Arthritis and Rheumatism Foundation at the dinner. Awards in memory of Mr. Paul Cotton, an arthritis victim who for many years was television critic for the DES MOINES REGISTER, were presented to Dr. Adrian E. Flatt, orthopedic surgeon at the SUI College of Medicine, and to Mrs. Howard Reppert, Jr., of Des Moines. Dis-

tinguished service awards were presented to the Polk County Medical Society, to a lay group and to a number of lay individuals, and to Drs. Walter F. Geigerich, of Atlantic; Carroll Larson, Jack M. Layton, Joseph Routh, and C. E. Radcliffe, all of Iowa City; and to four newspapers and one radio station.

Dr. Paul is medical chairman for the Iowa Chapter of the Arthritis and Rheumatism Foundation.

Letter to the Editor

Sir:

I am one of the members of the Iowa Medical Society who has defected to the warmer climes, but who still receives and enjoys reading the IOWA MEDICAL SOCIETY JOURNAL. I was concerned a bit about an article appearing on page 99, in the last issue (Feb. '63), "Plan for Eliminating Double Health Insurance Coverage."

I note, in this article, the suggested reduction of payments to 100 per cent of the billings. This much appears fair and reasonable on the surface, but I see NOWHERE, in the article, anything about reduction of PREMIUMS to people covered for the lesser insuring risk—no promise of returning this money said to be saved to the payor of the premiums (and no matter how thin you slice it, that IS the *worker* or *purchaser* of the policy, under any guise whatsoever).

This is something like placing a limit on payouts at the pari-mutuel window—"No matter how many tickets you purchase, we will pay ONLY ONE WINNER." Inasmuch as the purchase of MUCH so-called health insurance today is precisely like purchasing a pari-mutuel ticket, I do NOT think the simile is un-apropos.

WHO WILL LOOK OUT FOR YOUR PATIENTS? The insuring companies are out to look out for themselves!

Tucson, Arizona HAROLD J. PEGGS, M.D.

THE IOWA CHAPTER OF AAGP
will maintain a
HOSPITALITY ROOM FOR
MEMBERS AND GUESTS
at the Fort Des Moines Hotel during
the IMS annual meeting. Watch for the
placard that will announce the room
number.

THE JOURNAL *Book Shelf*



BOOK REVIEWS

BRAY'S CLINICAL LABORATORY METHODS, SIXTH EDITION, revised by *John D. Bauer, M.D., Gelson Toro, Ph.D., and Philip G. Ackermann, Ph.D.* (St. Louis, The C. V. Mosby Company, 1962. \$10.50).

All earlier editions of this text were widely used by students of medicine and medical technology. It was originally designed as a synopsis type of textbook in the field of laboratory medicine. This revision, by the new authors, maintains the welcome tradition of brevity, yet treats some subjects in a more complete fashion.

All of the major chapters have been completely rewritten. A new and much needed chapter on blood groups, blood typing, and cross matching was added. Much of the revised material is based on lectures given to students of clinical pathology and medical technology. Workshop manuals published by the American Society of Clinical Pathologists are heavily drawn from. The new techniques and procedures are as up-to-date as can be expected in a textbook.

The dimensions of the text are now in the conventional range. The replacement of single-column by double-column pages makes the text more readable. The illustrations are very good.

The text is recommended to students of laboratory medicine and medical technology, as well as to practicing physicians seeking concise ready-reference material.—*David Baridon, Jr., M.D.*

FUNDAMENTALS OF VOLUNTARY HEALTH CARE, ed. by *George B. deHuszar.* (Caldwell, Idaho, The Caxton Printers, Ltd., 1962. \$6.00).

This symposium covering non-governmental methods of health care includes discussions of their moral, biologic, physiologic, economic, and political implications by 33 outstanding authors. The papers are presented in five sections, each introduced by a well-written summary of the topics to be discussed, effectively tying together the subjects in each group.

To me, this book is a pure nugget of logical and factual information in the wasteland of muddled thought and discussion concerning the fundamentals of voluntary health care. It has a just claim to being the *only* source book on the matter. This explains why I think it should be read by every doctor of medicine who wishes a sound and broad basis for thinking and talking on the subject. The author admittedly presents just one side of this controversial subject, since there are many books devoted primarily to government-operated health care.

Voluntary associations and activities are described as the life-blood of a free society, as they have proved to be in producing the present high quality of medical achievement in the United States.

The background material and the portions devoted specifically to voluntary health care are well chosen.

The rationalization whereby the people delude themselves that everything done by their elected representatives is all right, is clearly brought out. "We careen, unwittingly, toward the servile state. . . . We are doing it to ourselves. . . . We need to translate the meaning of political action into plain language and precise terms. . . . Once confronted by clear-cut alternatives, almost every man can choose in full knowledge of the meaning of his choice." The pitfalls of the federal health "insurance" program must be made clear to the public.

The unconstitutional usurpation of power by bureaucrats and our chief executive, the implacable power of "the great pressure group of politically organized poverty and mendicancy," the impossible practicality of full employment and its political implications, and other equally significant topics are knowingly discussed. Fallacies of managed economy and the injustice of comparing the value of governmental services to operation of private business are presented.

A formerly reliable and authoritative source of criticism of federal spending has been effectively silenced by governmental support of research in our educational institutions. Therefore, it becomes the necessary duty of the practicing physicians themselves effectively to criticize questionable and unconscionable uses of public funds.

"Medicine the Decisive Decade" personalizes to every practicing physician and surgeon the challenge now upon the medical profession to stand against the tide that would engulf him.—*Ralph E. Smiley, M.D.*

HANDBOOK OF PSYCHIATRIC TREATMENT IN MEDICAL PRACTICE, by *Nathan S. Kline, M.D., and Heinz Lehmann, M.D.* (Philadelphia, W. B. Saunders Company, 1962. \$3.50).

This book uses a question-and-answer type of format to present a brief summary of modern methods of psychiatric diagnosis and treatment oriented toward practical problems facing the family physician. The first chapter, "Who Should Give Treatment?" states the authors' belief that "The majority of psychiatric patients should *not* be treated by psychiatrists." It then goes on to list criteria by which the practitioner can efficiently decide which patients he can expect to treat. How much, what kind of therapy, how long it

should be continued, and what constitutes success or failure of treatment are subjects which follow. The authors stress the use of drug therapy, rather than psychotherapy, as the family doctor's mainstay. They make one point which should be stressed more often: Especially with drug therapy, many psychotic patients have a much better prognosis than neurotics, and the fact that they are psychotic does not, by itself, preclude treatment by the general doctor.

The handling of depressed patients—most important in any general practitioner's use of psychiatry—is effectively presented. Practical and relatively uncomplicated criteria for drug therapy are presented, along with a discussion of how to evaluate the suicide potential in these patients. There is a chapter entitled "So You Have a Depression!" which in spite of its banal title gives brief, reasonable instructions to patients on antidepressant drugs. This chapter is available (free of charge) as a separate reprint for patients, and a post card order form is inserted inside the book's back cover.

I found this book to be a readable and commonsense approach to the practical aspects of mental illness. It can be referred to quickly for an answer, without the reader's being subjected to an excess of theory. Since the advent of psychoactive drugs 10 years ago, many psychiatrists have urged that more of the mentally ill be treated by their family physicians. Just how to diagnose correctly and to treat within the limits of the general practice situation are questions which have not been often or well answered. This book at least recognizes and attempts to cope with this problem.

The general practitioner who follows the diagnostic and therapeutic precepts presented in this book will find himself being more discriminating in his use of sedatives, tranquilizers and antidepressants, and I believe he will be much more effective with them than before.—*J. H. Ransom, M.D.*

GYNECOLOGY AND OBSTETRICS, by *John William Huffman, M.D.* (Philadelphia, W. B. Saunders Co., 1962. \$28.00).

This new book, in its first edition by Dr. Huffman, is an attempt to integrate the inseparable subjects of obstetrics and gynecology. As he states in the preface, the combination is not a unique one, but the attempt to present the material in chronological order, according to the age of the possible occurrence of the lesion, is new. The bulk of the material appears to be weighted toward obstetrics, but the gynecologic aspects have not been neglected.

The section dealing with the management of normal labor, as it relates to analgesic and anesthetic agents, is well written. The author nicely itemizes the advantages and disadvantages of, and relative indications for, the various technics of anesthesia, from the general agents to local and spinal-block technics. He very rightly and appropriately emphasizes the need to fit the anesthetic to the patient and to the conditions prevailing at the time of delivery. A notable feature in this area is the inclusion of the new narcotic-potentiating and tranquilizer drugs such as Phenegran, Vistaril, and Thorazine.

In the section on breech presentation, Dr. Huffman discusses external version and its complications, stresses the need for gentleness in this type of procedure,

and takes up failure, in which the fetus spontaneously reverts to its breech position. He discusses quite thoroughly the complications of premature rupture of the membranes, prolapsed cord, uterine dysfunction, secondary inertia, etc., and he stresses the need for adequate obstetric evaluation of the pelvis and increased leniency toward abdominal delivery in cases of breech presentation.

Under "Complications and Difficult Labor," he also discusses the oft-diagnosed but rather uncommon problem of post-maturity, emphasizing that post-maturity in itself is frequently a miscalculation of the EDC, and though it rarely causes any difficulty, it can do so if there is intra-uterine anoxia due to excessive placental aging. He emphasizes that the important thing in arriving at the diagnosis of post-maturity is not the menstrual history but the "ripening of the cervix," and that management should be based on this criterion.

In his next chapter, Dr. Huffman discusses uterine inertia and the differentiation between false labor and inertia, emphasizing the cervical changes and bringing forth the frequently-overlooked influence of emotions on dysfunctional labor in both primary and secondary inertia.

Continuing with abnormal labors, he discusses the dangers of precipitous labor as regards injury both to the maternal structures and to the fetus, the latter being a peril which is frequently overlooked. The emphasis, in the past, was placed on fetal and maternal injuries as a result of prolonged labor. He then discusses the importance of evaluation and management of prolonged labor. From that topic, he passes to a discussion of sterile vaginal examinations versus rectal examinations. I think it might be pointed out that studies have shown that adequately controlled and properly done sterile vaginal examinations are superior to, and carry no greater risk to the patient than, repeated rectal examinations.

Dr. Huffman has an excellent discussion on indications for cesarean section, including a few words on the dictum "Once a section, always a section."

He has an excellent and pertinent discussion on the newborn infant and its resuscitation. He emphasizes the need for clearing the airway of amniotic fluid, blood and debris, stresses the use of oxygen, points out the futility of the commonly used stimulating drugs and has a few well chosen words of criticism regarding mechanical resuscitations. However, he does omit the use of the antinarcotic agents such as Lorphan pre-delivery or post-delivery to combat any neonatal depression of drug origin.

A very fine résumé of isoimmunization covers the role of the antigens other than Rh, such as the ABO, Kell and Duffey, which are frequently overlooked, and mentions the unreliability of the Coombs' test in picking up this type of sensitization.

The section on uterine descensus is well organized and discussed. There is, however, one paragraph in which Dr. Huffman states that the procedure of choice for management of descensus in younger women involves the abdominal approach. This is an area in which a considerable divergence of opinion might be found, in that some people prefer a vaginal approach with utilization of something like a Manchester procedure. He goes a little further to call attention to the

possibility of pelvic relaxation in a nulliparous woman. This does occur, and frequently it is overlooked.

The chapter on uterine displacement is well organized, and brings forth some aspects which are ordinarily neglected—specifically ovarian dysfunction due to prolapse of the ovary, with pelvic congestion.

Dr. Huffman discusses at length the retro-displacements of the uterus, and places them in their proper light as to the presence or absence of symptoms, particularly dysmenorrhea, and he discusses the diagnostic use of a pessary. He also takes up the relation of retro-displacements to conception and abortion, and corrects many commonly misunderstood ideas regarding the influence of simple retro-displacements on these conditions. Further on, he gets into the question of uterine myomas, and nicely outlines their relation to the fertility of the patient. He goes into their diagnosis and gives a very adequate discussion of the indications for surgical intervention.

The concluding chapter takes up the physiologic and pathologic changes associated with the menopause. He describes it as being, in most instances, a relatively normal physiologic state, and outlines the advisability of management without hormones, if possible.

In summary, it is my impression that Dr. Huffman has presented an integrated and chronologically arranged account of the ills that beset the female. He has succeeded in producing a book which covers the essential facts, and has achieved a style that will appeal to the individual who wants a summary of the current thinking in this specialty. It is not, nor was it intended to be, a source of reference for the individual who is already schooled in the specialty of obstetrics and gynecology.—*George W. Rowney, M.D.*

SYNOPSIS OF GENITOURINARY DISEASE, SEVENTH EDITION, by *Austin I. Dodson, Jr., M.D., and J. Edward Hill, M.D.* (St. Louis, The C. V. Mosby Co., 1962. \$7.75).

The difficulty in writing a synopsis of any medical subject is that details, explanations and qualifying opinions must be omitted—otherwise a textbook would result. Because of these inherent weaknesses in such synopses, Dodson and Hill have, in my opinion, achieved only a partial success. The book, in the main, is to be read by students and general practitioners—possibly as their main source of urologic information. For this reason, I felt some of the opinions and treatments were to be criticized for having a local flavor, rather than general acceptance. Furthermore, some statements relative to important pathology lack clarity.

In Chapter One, for purposes of clarity, some symptoms might have been qualified as to frequency of occurrence. In this chapter it is stated, "With stone in the ureter, the urine is clear unless pyelitis is present." "Grossly clear," certainly was intended, rather than "microscopically clear," but students might not realize this. The authors say, "There may be only a rather fixed nodule near the apex in early carcinoma of the prostate." My experience indicates that this nodule need not be near the apex, need not be fixed and may be an indefinite hard area rather than a nodule. Early diagnosis of the prostate is so important that more description of this examination would be of value to all concerned.

In Chapter Two, more instrumentation in the face of infection is suggested than I think necessary. In the description of minor urologic surgery, aspiration of hydroceles is discussed as a method of treatment, with no warning of the prolonged morbidity that can follow infection of a hydrocele. They describe simple spermatocele excision without warning the reader of recurrences. Epididymectomy, which prevents such recurrences, is not mentioned. The statement "A spermatocele is a cyst of the testis" raises anatomical questions.

I disagree with the authors' symptomatology of nephroptosis, as in the phrase, "the trauma of the movable kidney." The questioned statements above tend to open the way for frequent use of nephropexy, an operation which is not often found necessary in the Midwest. The reviewer readily admits that there are some regional variations relative to indications for such surgery. The serious dangers of rapid decompression of the distended bladder noted by the authors have not arisen in my practice, although certainly, 24-hour decompression is usually more comfortable.

The above criticisms are proportionately few, when one considers the scope of the book, yet they are pertinent because of their significant influence upon the diagnosis and treatment of urologic patients.—*Wayland K. Hicks, M.D.*

BOOKS RECEIVED

ENDOCRINE AND METABOLIC ASPECTS OF GYNECOLOGY, by *Joseph Rogers, M.D.* (Philadelphia, W. B. Saunders Company, 1963. \$8.00).

SURGERY, by *Richard Warren, M.D.* (Philadelphia, W. B. Saunders Company, 1963. \$19.50).

SYNOPSIS OF PEDIATRICS, by *James G. Hughes, M.D.* (St. Louis, The C. V. Mosby Company, 1963. \$9.85).

CURRENT DIAGNOSIS & TREATMENT, by *Henry Brainerd, M.D., Sheldon Margen, M.D., and Milton J. Chatton, M.D.* (Los Altos, California, Lange Medical Publications, 1963. \$9.50).

GASTROENTEROLOGY, SECOND EDITION, VOLUME I, by *Henry L. Bockus, M.D.* (Philadelphia, W. B. Saunders Company, 1963. \$25.00).

MEDICAL LABORATORY TECHNOLOGY, by *Matthews J. Lynch, M.D., Stanley S. Raphael, M.D., Leslie D. Mellor, Peter D. Spare, Peter Hills and Martin J. H. Inwood.* (Philadelphia, W. B. Saunders Company, 1963. \$12.00).

CORONARY HEART DISEASE (The Seventh Hahnemann Symposium), ed. by *William Likoff, M.D., and John H. Moyer, M.D.* (New York, Grune & Stratton, Inc., 1963. \$17.75).

THE INNERVATION OF BLOOD VESSELS, by *T. A. Grigoreva.* (New York, Pergamon Press, 1962. \$9.00).

TRANSPLANTATION, a Ciba Foundation Symposium, ed. by *G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Margaret P. Cameron, M.A.* (Boston, Little, Brown and Company, 1962. 12.00).

A PRIMER OF URINALYSIS, SECOND EDITION, by *Robert M. Kark, M.D., James R. Lawrence, M.B., Robert C. Muehrcke, M.D., Conrad L. Pirani, M.D., Victor E. Pollak, M.D., and Homero Silva, M.D.* (New York, Hoeber Medical Division—Harper & Row, Publishers, Inc., 1963. \$3.85).

THE DOCTOR'S BUSINESS

Tax Reforms And Reductions Purposed

HOWARD D. BAKER

Waterloo



On January 24, 1963, President Kennedy delivered a special address to Congress proposing broad legislative changes which would drastically alter our present tax system and rate structure. The changes proposed go to the very heart of our tax system. Rates would be reduced substantially over a three-year period; however, reforms would be inextricably tied in with rate changes—thereby softening the effect upon total governmental revenue.

The impact of President Kennedy's proposals is contained in four specific phases of revision. These are "Rate Reduction," "Relief of Hardship," "Base Broadening and Equity," and "Capital Gains Revisions."

RATE REDUCTION

Individuals. The present rate range of 20 to 91 per cent would be lowered to a range of 14 to 65 per cent over a three-year period.

For Calendar 1963, the range would be 18.5 to 84.5 per cent.

For Calendar 1964, the range would be 15.5 to 71.5 per cent.

For Calendar 1965, the range would be 14 to 65 per cent.

Corporations. Rates for these would also be reduced in three annual stages, and ultimately the tax on the first \$25,000 would be reduced from 30 to 22 per cent, and the rate on corporate income over \$25,000, from the present 52 to 47 per cent.

For Calendar Year 1963, the rate on the first \$25,000 would be reduced from 30 to 22 per cent, and the rate on income over \$25,000 would remain at 52 per cent.

For Calendar Year 1964, the rates would be 22 and 50 per cent.

For Calendar Year 1965, the rates would be 22 and 47 per cent.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

Corporate Estimate provisions would be revised to the same quarterly basis as individuals at all corporate income levels.

RELIEF OF HARDSHIP

There have been seven major revisions proposed for the relief of hardship.

(1) A new "minimum" standard deduction would allow \$150 for each spouse, plus \$100 for each dependent up to the present maximum of \$1,000.

(2) The child-care deduction would be increased to \$1,000 (from \$600) where three or more children are involved, and the \$4,500 income maximum would be increased to \$7,000.

(3) Persons over 65 would be given a \$300 *tax credit* to replace the present double exemption and the retirement-income credit.

(4) Persons whose incomes fluctuate widely from year to year would be permitted to employ an "averaging" technic.

(5) New employees' moving expenses would be deductible.

(6) The presently restrictive 30 per cent maximum for contributions would be broadened to include all bona fide charities.

(7) Research and development would be encouraged by allowing a 100 per cent first-year write-off of the cost of research and development equipment which is now subject to depreciation over an extended period.

BASE-BROADENING AND EQUITY

Nine specific proposals were made to broaden the tax base and "equalize" the tax burden.

(1) Itemized deductions for individuals would be limited to the excess over 5 per cent of adjusted gross income.

(2) The medical exclusion would be increased to 4 per cent, and the 1 per cent on drugs would be eliminated. Medical expense over 4 per cent would go into total deductions and would be subject to the 5 per cent exclusion on deductions (No. 1 above).

(3) A 4 per cent exclusion would be applied to casualty losses, and thus the small ones would be eliminated. The amount in excess of 4 per cent would be subject to the 5 per cent exclusion in No. 1 above.

(4) The unlimited charitable-contributions deduction now available to a "handful" of taxpayers would be eliminated.

(5) The "sick pay" exclusion would be eliminated.

(6) The \$50 dividend exclusion and the 4 per cent dividend tax credit would be eliminated.

(7) The exclusion of premiums paid by an employer for group insurance would be eliminated.

(8) Personal holding-company provisions would be strengthened.

(9) New and special allowances would be made to foster the efficient development of natural resources, but more stringent restrictions would apply to computation of depletion allowances, and capital gains on mineral properties would be sharply curtailed.

CAPITAL GAINS REVISIONS

(1) The percentage of capital gains includable in income would be reduced from 50 to 30 per cent for "long-term" assets. However, the holding period for long-term treatment would be increased from the present six months to one year.

(2) The alternative tax on capital gains would be reduced from 25 to 22 per cent.

(3) An indefinite "carryover" period would be provided for capital losses.

(4) All net gains on capital assets would be accrued and taxed at the time of transfer by death or gift.

(5) Preferential treatment on stocks acquired by exercise of stock option would be eliminated.

These are the important change proposals. One doesn't have to be much of a tax expert to sense that the alleged tax reduction for the higher-income taxpayer is pretty highly imaginary, and that many will actually suffer an increase. For the low-bracket individual claiming a standard deduction, the savings will be significant. However, for many others, the reduction will range from inconsequential to nonexistent.

Using a "typical" physician who has a \$30,000 gross income, of which \$2,000 is jointly-received dividends, and who has \$3,000 in deductions (including medical and casualty losses) and four exemptions, present taxable income is \$24,500 and tax liability is \$6,939.

Under the new proposals, taxable income in future years would be \$26,700. Tax liability for 1963 would be \$7,557, up \$618. For 1964, it would be \$6,722, down \$217. And for 1965, liability would be \$6,318, down \$621 from the 1962 level. The total effect over the three years would be a \$220 reduction, or an average of \$73 per year over the first three years.

Although any tax reduction is a step in the right direction, the size of the proposed reduction is less than might be thought at first glance. The example above is a "typical" high-bracket taxpayer. For those with the misfortune of having the wrong types of income or deductions, the alleged decrease could result in higher taxes. This is especially true at the \$40,000 to \$50,000 level, where deductions would be reduced by \$2,000 to \$3,000 annually. Other less direct, but unfavorable, factors are the imminent inflationary effects of such a reduction, and the indirect but automatic increase in state income-tax liability due to lower deductions for federal income tax paid.

All factors considered, these proposals have already been heavily watered down and are likely to be revised much further before Congress enacts anything. Congressional and business reaction to the proposals have been relatively unfavorable. The consensus tends to favor a compromise rate reduction, with little or no action on the so-called "reforms" which seem to be a "soak the rich" approach to tax reform.

Although President Kennedy has asked for legislation retroactive to January 1, 1963, many legislators feel that July 1 is the earliest possible date, and January 1, 1964, is a much more probable date for any tax relief.

Mail Exam Finds Cancer of Cervix

Cancer of the cervix has been found in a Washington County, Md., woman through an examination-by-mail program started in January by the Johns Hopkins Medical Institution, Baltimore.

The woman collected a vaginal specimen herself and mailed it to a Hopkins laboratory. Tests verified the presence of an early curable cancer and the woman is now receiving treatment.

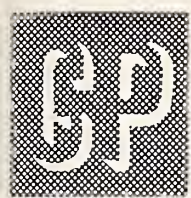
The exam-by-mail technique, developed by Hugh J. Davis, M.D., Johns Hopkins School of Medicine, is being used to examine the entire female population of Washington County between the ages of 30 and 45.

Dr. Davis, in reporting the first positive finding in the current program, said 175 of the 10,000 women who will participate have already been tested. He said he expects to find about 100 cases of early curable cancer among the 10,000.

First demonstrated by Dr. Davis in Copenhagen, the method utilizes a plastic pipette containing an irrigating solution. The pipette is mailed to a woman with written instructions.

The woman then mails the pipette back to the laboratory for examination by technicians. Suspicious findings will be reported to the woman's personal physician, who will arrange for further tests and any treatment necessary.

The program is being supported by the American Cancer Society, with the backing of the Washington County Medical Society.



Iowa Chapter of the American Academy of General Practice

A Woman Doctor Is an Oddity

I was asked to prepare an article on Women in General Practice. I know only two or three such people, and only one very well—myself. I am reminded that a woman doctor is an oddity every time I look for a place to settle down for a few minutes, to change clothes, to use a phone, or to catch a catnap while waiting for an OB in the hospital. I learned very early not to go into the places marked “Doctors.” The places marked “Nurses” are usually full.

I was reminded, as in intern, that a woman doctor is an oddity when the sister in charge of OB told me I would have to provide my own scrub dresses unless I wanted to wear what the men wore. (She didn't like *women* doctors, or so the chief resident told me.) I was reminded of it as a medical student, when the professors excused themselves to us girls before they used slang terms for clarification. At the time, these terms were lost on me anyway, but it would be hard to stump me now. I had been reminded of it at the pre-medical conferences as a “kindly warning.” But I thought I would like being a doctor anyway—and I do!

I get a kick out of the looks I get, and the phrase “You don't look like a doctor!” Sometimes I think it surprises my Des Moines colleagues that I have patients in the hospital, and that I deliver babies, take out tonsils, look at x-rays, pretend I'm reading EKG's, calculate electrolytes, scrub in surgery, go to meetings, guess right on diagnoses, etc., but most of all it surprises them to see a patient of mine listen to what I have to say. “How can grown men and women,” they ask themselves, “take medical advice from someone who doesn't look like a doctor?”

There is a neat bit of trickery in this, many times, I'll admit. It took me several months of general practice to get a positive sound into my voice. I found that I unconsciously adopted the habit of referring to my office as though it were a big clinic, and alluding to a vague medical authority somewhere in a big building in Des Moines to give punch to my medical advice.

Each patient is different. With the elderly, I'm the smart little girl who understands the mechanics of the heart and its medications, but hasn't

been around enough to know about *things*. They seem to forgive me my lack of experience. For the young middle-aged, I'm the contemporary who took a direction different from marriage and family, and who is intelligent about the medical care of themselves and their children, just as they are intelligent about family living. For teenagers, I'm an old lady with a big, shiny hardtop convertible who seems to be on top of the world, and it is not hard at all for them to think I know all the answers. (They don't yet know about installment payments!) For the children, I'm the pretty lady with the cute dog and the pretty office. Very few of them are afraid of me—a most unusual situation for a children's doctor.

Young men from 12 to 40 don't come to me unless they are extremely ill and don't mind who takes care of them, unless they feel close to me as a doctor because I have taken care of someone else in their family, or unless they are extremely secure and “unconfused” in their own “boy-girl” relationships. Young males whose only claim to ego is a self-taught superiority to women find it a shattering experience to take off their clothes for a woman doctor. Otherwise, they don't mind taking off—but that's out of context.

I enjoy the ups and downs of daily practice. Every day is a project. There are morning residence visits, mail, patients, noon calls, afternoon office hours, dictation, the evening trip to hospital—with the project usually completed by 9:00 or 10:00 p.m. My night calls are not frequent, and are usually real emergencies. (Schedule subject to disruption at any time.) I love it, I live exclusively for it and my patients know it. Yet, of course, my preceptor has proved that a woman GP can have a home and family. It was during my preceptorship with her that my fear of going into general practice was completely removed. Now she has led the way again. Hmm!

I do a lot of telephone doctoring, and all of my basic laboratory work. We—(there I go again)—do some x-rays, take EKG's and carry a few medicines. My office is open 49 hours a week. For all this, I find I need two full-time girls, though my overhead is consequently too high. One is a secretary—par excellence—who, with a few skillful questions, saves me many a half-hour phone conversation. She keeps the daily record accurately,

and pleasantly browbeats me into dictating a note on each patient seen. The other is a medical assistant who somehow gets an idea of what is wrong with each patient and does the necessary lab work before I get to him or her. Occasionally, patients will tell her things they think I just automatically should know. Both are eternally loyal to me and are very discreet—most pleasant attributes in a small town.

For disadvantages: My office is unhandy and cold, with pieces of machinery that take turns falling apart, and I am 20 miles from the hospital. I have a telephone-company answering machine on my apartment phone which takes its regular turn in breakdowns. My car is a hopeless neurotic. Though the mechanic has never actually said, "It's just nerves," he has had to treat it for a lot of different conditions. Wonder if it should have bumper-to-bumper x-rays.

Anyhow, I chose solo general practice in Iowa for my early medical career for many reasons. First of all, I very much enjoy being my own boss. I resent orders from insurance companies, state welfare offices, hospital administrators, medical-records librarians, the AMA, and the patient's mother-in-law. In general practice, I can reserve the right to antagonize all of these.

Second, I sympathize with the people of Iowa and share their hardworking, self-reliant stubbornness. It seems to me that a man who lives close to the earth, sees the changing seasons, participates in the births and deaths of his farm animals, and witnesses directly the fruits of his labors, achieves something very fundamental in life. On many occasions, I have observed the quiet acceptance of the inevitable which seems to permeate these people.

Third, I enjoy knowing adults and youngsters as whole families, and predicting trends in the children from the medical experiences of the elder family members. In training, each new service to which I was assigned seemed sure to be my specialty. I realized after my internship that a never-ending variety of patients was my "cup of tea." I like old men, with their congestive heart failure and their prostate trouble; young mothers, with their pregnancies, labors and wee-small-hour deliveries; and babies just for being babies. Occasionally I find a menopausal woman I can help—that really makes a good day.

After two and one-half years of general practice, I find that I have learned much about people, folk-medicine, infectious disease, late post-op symptoms, and the most common cause of bright red urine (Ex-lax), and that I have forgotten most of what I learned about dermatology, eye and tropical diseases.

Women contemplating careers in medicine should consider the fact that general practice offers outstanding challenges and rewards. For me, it's the BEST!

The Sleeping Dragon—TB*

Even with all of its knowledge, the medical profession has never been able to eradicate a disease. It has known how to exterminate smallpox since 1796. It has brought diphtheria, gonorrhea and syphilis to low levels, but they have risen again. In each instance, resurgence has been due mainly to over-optimism and complacency on the part of the public whose attitudes have been influenced by the medical profession, which is not immune to the development of the same dangerous state of mind.

Tuberculosis, which has been a terrible destroyer of mankind and domestic animals since prehistoric days on the plains of the Ganges, was taking approximately 200 lives annually for each 100,000 population in the United States when the 20th Century began. For each death, there were eight or more clinical cases, and well nigh 100 per cent of adults were infected with tubercle bacilli. A vigorous attack waged over the decades produced phenomenal results. By 1959, the death rate was 6.5 per 100,000 (11,474 deaths). The same year the new case rate was down to 32.5 per 100,000 population (58,000 new cases). There had also been marked reduction in tuberculous infection among children and young adults.

DANGEROUS COMPLACENCY

As mortality, morbidity and infection rates were continuously decreasing, perilous complacency set in. Indeed, in many places effective tuberculosis eradication activities slowly ground to a halt, and in some areas deterioration of programs began and tuberculosis eradication work was almost abandoned. Now one wonders if this most destructive disease from antiquity is about to escape extermination like the others.

Some of the reasons for complacency are: (1) that the marked reduction in mortality and morbidity rates have been widely publicized and erroneously interpreted as indicating the end was near and tuberculosis "would die out" without further effort; (2) that the over-enthusiasm for the use of antituberculosis drugs and resectional surgery leave the impression that they constitute a panacea; and (3) that sanatoriums are no longer being used to capacity. That this should occur when extermination of tubercle bacilli is less than half accomplished, when bacilli have taken refuge in almost 50,000,000 of our citizens, when more than 50,000 are reported with "new" clinical lesions each year, more than 10,000 die annually and tuberculosis is still a national defense item is an enigma. This conundrum assumes even greater proportions when one realizes that in the United States, and indeed in the world as a whole, tu-

* Statement prepared by the Joint Committee on Chest X-ray of the American College of Radiology and the American College of Chest Physicians.

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berculosis still causes more incapacity and death than all other communicable diseases combined.

The number of clinical tuberculous lesions which develop is dependent upon the number of persons who have been invaded by tubercle bacilli and therefore are reactors to tuberculin. Not a high percentage of tuberculin reactors develop clinical tuberculosis in any single year, but the aggregate over a period of many years is large. Therefore, with well nigh 50,000,000 of our citizens now harboring tubercle bacilli, several million may be expected to develop clinical and contagious tuberculosis. If the disease is allowed to evolve to an advanced and contagious stage in 75 per cent of these individuals before it is found, as is now true, they will infect large numbers of persons and the vicious cycle will continue, and the eradication goal will never be reached.

The attack must now be made on the tubercle bacillus rather than on just the damage it has caused. As long as there are even a few apparently well people harboring tubercle bacilli in any area, there is little hope of avoiding resurgence of clinical tuberculosis.

THERE ARE MANY TB "CARRIERS"

The apparently well people who harbor tubercle bacilli, of whom there are such large numbers in this country, have lesions which may be likened to machine gun nests, or land or sea mines. They have been accused of carrying concealed weapons. Every year some such persons are responsible for outbreaks of tuberculosis. It was they who contributed more than 50,000 new clinical cases last year and probably another 50,000 this year. Recently, for example, a senior high school student in Ohio became contagious of whom it was said "TB Pocket in Henry County Boosts Infection Rate Sky High." In Superior, Wisconsin, a senior high school student became contagious and disseminated tubercle bacilli to classmates and others, causing several to be hospitalized. In a large centralized school in upstate New York, a school bus driver developed contagious tuberculosis and apparently infected 30 per cent of the students whom he transported. In Whitehall, Michigan, a student athlete developed contagious tuberculosis, and seven active and 98 potential cases apparently resulted from exposure to him. In Edmonton, Canada, a high school teacher with contagious tuberculosis evidently infected 90 students.

STEPS THAT MUST BE TAKEN

Unless tuberculin testing and routine chest radiography, the well known methods of avoiding such outbreaks, are resumed in places where they have been abandoned and instituted where they have not been employed, tuberculosis may be expected to result in one outbreak after another

until it has resumed its former destructive status.

Although past accomplishments have been phenomenal, we are less than halfway to the eradication goal. Eradication refers to extermination of tubercle bacilli. This necessitates identifying all persons regardless of age who are harboring tubercle bacilli, for it is only such persons in whom clinical and contagious disease has or will develop. They can be found only with the tuberculin test. Inasmuch as tuberculosis is transmitted from one person or animal to another, when an individual reacts to tuberculin the existence of at least two cases is immediately known: (1) The reactor himself who has at least microscopic lesions; and (2) the responsible contagious person, usually an adult. At this point, other phases of the examination must be made promptly and completely, the most important of which is x-ray film examination of the chest of the reactor to determine whether there is evidence of one or more demonstrable, destructive lesions. If none is found, periodic x-ray film examinations of the chest are made to detect clinical lesions, if and when they evolve, before they have caused symptoms, are contagious and are more easily treatable. Next is the search for the contagious case responsible for the infection of the recently discovered tuberculin reactor. When such a case is found, isolation and treatment should be immediately instituted. Allowing children to become infected with tubercle bacilli today postpones attainment of eradication at least 70 years, since tuberculosis is often a lifetime disease.

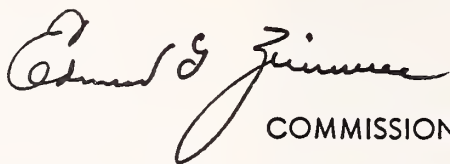
Carrying out this program for approximately 185,000,000 people requires more effort and is more time consuming than all the tuberculosis work of the past. However, it is the only method by which resurgence can be prevented and the eradication goal attained.

The largest demonstration of eradication procedures in people or animals has been conducted among the cattle of this country since 1917. This has revealed that even though the percentage of tuberculin reactors is reduced to 1 in 1,000, revival of the disease occurs when effort is relaxed.

Hospital staffs should be encouraged to include admission chest x-ray film examinations. Additional emphasis on alerting the public to the importance of tubercle reactors' having annual chest examinations including x-ray films is an important factor toward ultimate eradication.

Inasmuch as diagnosis and treatment of this disease are the responsibilities of physicians, it is they who must avert further resurgence of tuberculosis. They have the know-how and must strike while there is still time. To allow complacency to continue for lack of conveying the true situation to physicians everywhere, and indeed to the general public, can result in loss of everything that has been accomplished during this century.

STATE DEPARTMENT OF HEALTH



COMMISSIONER

Sabin Live-Virus Poliomyelitis Vaccine

A technical advisory committee consisting of members of the State Board of Health and seven physicians chosen by the Iowa Medical Society met January 31, 1963, with Edmund G. Zimmerer, M.D., commissioner of public health, and Ralph H. Heeren, M.D., director of the Division of Preventable Diseases, to set up a state policy regarding the use of the Sabin oral poliomyelitis vaccine. Those representing the State Board of Health were: Franklin H. Top, M.D., Iowa City; J. D. Caulfield, M.D., New Hampton; and Paul D. Pedersen, M.D., Council Bluffs. Physicians representing the Iowa Medical Society were: Lee F. Hill, M.D., Des Moines; Jack J. Spevak, M.D., Des Moines; James F. Speers, M.D., director of the Des Moines-Polk County Health Department; S. P. Leinbach, M.D., Belmond; Charles J. Baker, M.D., Ft. Dodge; James G. Widmer, M.D., Wayland; and Harold L. Ganzhorn, M.D., Mapleton.

After a careful re-evaluation of the December 18, 1962, report from the office of Surgeon General Luther Terry of the U. S. Public Health Service, and consideration of the January 18, 1963, report from the American Academy of Pediatrics Committee on Control of Infectious Diseases, the Iowa group agreed that communities planning immunization campaigns against poliomyelitis should be "urged to move ahead" in using all three types of Sabin oral vaccine, with particular emphasis on children and young adults. The Iowa committee further agreed that there are no contraindications to the initiating of new programs or to the completing of Sabin oral vaccination programs already started.

Both the Salk and the Sabin vaccines are recommended by the U. S. Public Health Service and endorsed by public health authorities. Procedures for using Salk vaccine are well known, and the results to date have been gratifying. Choice of which vaccine to use and when to use it should rest with each community and its physicians, and should be governed by local conditions, facilities and leadership, by the general recommendations from the office of the Surgeon General of the U. S. Public Health Service, and by the recommendations of the American Academy of Pediatrics.

Use of the Sabin oral poliomyelitis vaccines should be guided by the recommendations of the Surgeon General and his committee. These recom-

mendations include the following paragraph taken from the MORBIDITY AND MORTALITY WEEKLY REPORT of the U. S. Public Health Service, dated December 18, 1962:

"It is therefore recommended: (1) that community plans for immunization be encouraged, using all three types; and, (2) that immunization be emphasized for children in whom the danger of naturally occurring poliomyelitis is greatest and who serve as the natural source of poliomyelitis infection in the community. Because the need for immunization diminishes with advancing age and because potential risks of vaccine are believed by some to exist in adults, especially above the age of 30, vaccination should be used for adults only with the full recognition of its very small risk. Vaccination is especially recommended for those adults who are at higher risk of naturally occurring disease; for example, parents of young children, pregnant women, persons in epidemic situations and those planning foreign travel. Of greatest importance is the continuing vaccination of oncoming generations."

The Iowa committee suggests that large-scale Sabin immunization clinics should not be planned for the summer months, especially in areas of the state where intestinal viruses are known to be present. This precaution is urged because of the probable failure of the Sabin attenuated strains of polio-virus to establish themselves in the intestinal area and produce basic immunity in the presence of so-called "wild" or naturally occurring virus infections.

Have You Informed Us of Your Change of Address?

Postal regulations on second class mail have become more stringent. Under a new ruling, we must pay ten cents per piece for undeliverable second class mail, but worst of all, if you don't happen to reside or practice at the *precise* mailing address which we have for you, your JOURNAL will not be delivered. We urge promptness on the part of all JOURNAL readers in notifying us of address changes!

Diagnostic Services Available

STATE HYGIENIC LABORATORY

IOWA CITY, IOWA

The following is a list of the major laboratory diagnostic services available to Iowa physicians as of January 1, 1963.

1. Agglutination Tests^{1, 2}
 - Brucellosis—human and animal
 - Rocky Mt. Spotted Fever-Typhus group—Weil-Felix
 - Typhoid-Paratyphoid group
 - Trichinosis
 - Tularemia
 - Leptospirosis
2. Blood Cultures
 - Anthrax—human and animal
 - Brucellosis
 - Salmonella group
 - Miscellaneous (fee commensurate with the work involved)
3. Cultures and/or Specimens
 - Anthrax—human and animal tissue
 - Brucella—for species identification
 - Diphtheria—swabs and sub-cultures for toxigenicity tests
 - Feces—Salmonella and Shigella group, etc.
 - Food poisoning—consult laboratory before submitting specimens
 - Fungi—Ringworm, Histoplasmosis, etc.
 - Pleural Fluid—Tuberculosis, Brucellosis, etc.
 - Spinal Fluid—Meningitis, Brucellosis, etc.
 - Sputum—Tuberculosis
 - Streptococcus sore throat—swabs
 - Staphylococcal infections—swab or sub-cultures
4. Smears
 - Fungi and yeasts
 - Gonorrhea
 - Vincent's Angina
5. Parasitic Diseases
 - Blood—thick and thin films for malaria and other blood parasites
 - Feces—request special parasite and ova kit
 - Urine
 - Sputum
 - Pork Tissue—Trichina
 - Toxoplasmosis^{2, 3}—dye test—send tube of sterile unpreserved clotted blood
6. Rabies—human and animal exposures. Specimens prohibited in mail. May be shipped by Railway Express. DO NOT FREEZE. Obtain small and large water-tight metal containers. Place head in small container. Fill large container $\frac{3}{4}$ full with wet ice. Place small container inside large container. Attach complete exposure history and name of physician and/or veterinarian.

7. Animal Inoculation Tests
 - Anthrax
 - Diphtheria—toxigenicity test
 - Tuberculosis material (\$5.00 fee charged to cover partial cost of two animals and food for period of observation)
8. Serologic and Allied Tests
 - Infectious Mononucleosis (Heterophile antibody)
 - Syphilis
 - Blood
 - Kolmer complement fixation test—qualitative and quantitative
 - VDRL test—qualitative and quantitative
 - Treponema Pallidum Immobilization test (TPI)⁴
 - Reiter Protein Complement Fixation test (RPCF)⁵
 - Spinal Fluid
 - Kolmer complement fixation test—quantitative
9. Special Complement Fixation Tests^{1, 2}—paired specimens essential, first specimen held until second specimen is received
 - Blastomycosis
 - Coccidioidomycosis
 - Histoplasmosis
 - Virus and Rickettsial Diseases
 - Eastern and Western equine and St. Louis encephalomyelitis
 - Lymphocytic choriomeningitis
 - Mumps
 - Lymphogranuloma venereum
 - Psittacosis
 - Q fever
 - Rickettsial Pox
 - Rocky Mt. Spotted Fever
 - Typhus Fever
 - Murine
 - Epidemic
10. Water Analyses (\$2.00 fee)—specimens are fee-exempt only when specifically authorized by staff of the Iowa State Department of Health in checking sources of illness or health hazards
 - Bacterial tests for coliform group
 - Chemical test
 - Fluoride
 - Hardness
 - Iron
 - Nitrate
 - Complete chemical analysis—fee commensurate with work involved
11. Bacteriophage typing—coagulase positive *Staphylococcus aureus* only. Limited to groups of cultures obtained in epidemiological investigation of infectious outbreaks
12. Fluorescent Antibody Studies
 - Diphtheria⁴
 - Rabies
 - Streptococcus (Group A only)⁴
 - Variola/vaccinia⁴
 - Consult laboratory for other special applications

CONTAINERS DISTRIBUTED TO PHYSICIANS

Agglutination tests
 Diphtheria—swabs—one for the nasopharynx and one for naris
 Serologic tests for syphilis

¹ One specimen taken during acute phase and another 10 days to several weeks later, depending on the disease.

² Date of illness onset, date of specimen collection, contact source if known, whether first or second specimen and major symptoms must accompany specimen.

³ Limited to suspected congenital toxoplasmosis and/or mothers of suspected congenital cases.

⁴ Special container and/or procedure required.

⁵ Routinely on all reactive sera. Performed on Tuesday each week.

⁶ Restricted to special problem cases approved by laboratory.

Slide container for gonorrhea smears, malaria and Vincent's angina
Throat—swab
Tuberculosis, sputum and animal inoculation
Special (perishable) for immediate use only:
Blood culture—specify use
Feces—bacterial
Feces—parasitic (2 vial kit)
Water—specify whether chlorinated or unchlorinated supply, and tests desired

Recommendations Regarding Fecal Containers and Specimens

In order to insure the use of freshly prepared containers essential in obtaining reliable examinations, the following policy has been adopted by the State Hygienic Laboratory and the Iowa State Department of Health.

When a case of typhoid fever, bacillary dysentery or other *salmonella/shigella* infection is diagnosed or suspected, when release specimens are to be obtained, or when epidemiologic evidence points to a person or several persons as being carriers of typhoid fever, special containers for sending stool and urine to the State Hygienic Laboratory will be forwarded from the laboratory, together with detailed instructions for the proper collecting and shipping of the specimens. Requests can be made by: (1) State Department of Health; (2) patient's physician; (3) district health officer; (4) health officers of city or county health units; or (5) nurses associated with the above agencies.

Unless otherwise specified, the containers will be sent to the requesting individual or agency for relay to the patient. It is essential that persons requesting containers indicate the number of cases to be cultured and the number of containers required for immediate use.

Attention is directed to the following instructions:

1. The bottle in the outfit contains a buffered solution of 30 per cent glycerine in saline, which acts as a bacteriostatic agent. This prevents putrefaction of the specimen enroute to the laboratory, and permits a reliable examination to be performed—provided the instructions for collecting and shipping the specimen are rigidly followed. If a portion of stool the size of a navy bean and no larger, or its equivalent in liquid stool, is placed in the solution immediately following passage, and is shipped to the laboratory without delay, the specimen will arrive at its destination in approximately the same condition as when passed by the patient.

2. Specimens submitted without the preserving solution represent waste of time and effort for all concerned, because nonpathogenic bacteria such as colon organisms multiply very rapidly and make the isolation of pathogenic micro-organisms extremely difficult or impossible.

3. With appreciable evaporation, the solution becomes bacteriocidal, and thus pathogenic bacteria such as typhoid organisms are destroyed, and examination is rendered useless. The solution will keep satisfactorily for 60 days under normal conditions; hence a 60-day expiration date is stamped on the container. *The use of any container beyond the expiration date will result in rejection of the specimen as unsatisfactory.*

4. Outdated containers should be returned to the laboratory for reclamation and re-use.

5. In view of the well-known bacteriostatic action of sulfonamide drugs, penicillin, etc., fecal specimens for release from restrictions placed upon typhoid fever or bacillary dysentery patients must be secured not earlier than 14 days after discontinuance of such therapy.

If the specimens are to be collected by some member of the patient's family or attendants in a hospital, it is important that the above instructions be transmitted to the attendants and rigidly followed by them.

Cooperation and consideration of these matters will be greatly appreciated.

National Institute of General Medical Sciences

Establishment of the National Institute of General Medical Sciences, with Dr. Clinton C. Powell as its director, was announced on February 8 by Surgeon General Luther L. Terry of the U. S. Public Health Service. This brings the total of the national health institutes to nine. The new institute was formerly the Division of General Medical Sciences of NIH.

The National Institute of General Medical Sciences will be responsible for administering, fostering and coordinating research in the sciences basic to medicine and biology, to public health, and to certain clinical sciences and biomedical studies not within the responsibility of the other institutes. NIGMS will support programs of research grants, of training for investigators, and of fellowship awards. The new Institute's programs are extremely broad, covering the natural and behavioral sciences; certain clinical sciences, including general surgery, pathology and anesthesiology; and various new methods of science in such fields as electronmicroscopy and biostatistics. Knowledge gained from such research nourishes all of science and provides the insight and encouragement which inquiring minds have always sought, according to Dr. Terry.

The director of the new Institute, Dr. Powell, served as head of the Division of General Medical Sciences since August of last year, and has been with NIH since 1954.

Short Hospital Stay for Nervous Breakdown

A person who has a nervous breakdown today may be hospitalized for only three to six weeks. This relatively short hospital stay is part of the treatment program for acute psychiatric conditions conceived by the Langley Porter Neuropsychiatric Institute, at the University of California Medical Center, San Francisco.

"Modern treatment methods have given a physician an opportunity to handle the vast majority of acute conditions in a matter of weeks without incurring the disabling side effects of prolonged hospitalization," Drs. Jurgen Ruesch, Carroll Brodsky and Ames Fischer, of the Institute, have declared in the February, 1963, ARCHIVES OF GENERAL PSYCHIATRY.

"Patients need hospital care only when their behavior is acutely disordered," they said. "Thus, short-term hospitalization but long-term follow-up has become the rule." The patient and his relatives are informed, upon his admission, that his stay in the hospital will be limited to a few weeks. This conveys to the relatives the idea that the patient cannot be abandoned, and it impresses the patient with the futility of finding a permanent form of adaptation to the hospital, the authors explained. When the patient leaves the hospital, both he and his relatives are informed that he is still a sick individual and needs further care. He is urged to revisit the hospital regularly, and the physician who originally treated the patient and sent him to the hospital continues to follow him for three to six months. Later, follow-up visits to the hospital may be made, and in some cases a doctor-nurse team attempts to facilitate the patient's adaptation outside the hospital.

After-care treatment must be provided for all discharged schizophrenic patients, the authors said. This type of patient "cannot be discharged and left to his own devices, floating in a large city, unrelated and without friends." He must be assured of human relations under supervision and treatment for a long period of time.

Hospital treatment is aimed at eliminating the socially disruptive and individually conflicting behavior of the patient by means of drugs, electroshock therapy, psychotherapy and social planning, the authors said.

The report on the Institute's program was based on a series of 219 patients, 146 women and 73 men, ranging from 12 to 74 years of age and representing all social classes and educational levels. Diagnostically, the authors said, they fell into four groups—48 depressives, 89 schizophrenics, 74 psychoneurotics and personality disorders, and 8 brain disorders. The average hospital stay for psychoneurotic disorders and cases of brain disease was about three weeks, for depressives five weeks and for schizophrenics six weeks. Only seven of the

219 required re-hospitalization, and only four of the 219 had to be sent to the state hospital for prolonged care rather than being returned to the community.

An evaluation of each patient six months after discharge revealed that the social adaptation of the majority, at least, equalled their pre-breakdown condition, the authors reported.

Morbidity Report for Month of January, 1963

Diseases	1963 Jan.	1962 Dec.	1962 Jan.	Most Cases Reported From These Counties
Diphtheria	1	0	0	Fayette
Scarlet fever	319	261	304	Clay, Dubuque, Johnson, Kossuth, Polk
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	1359	744	382	Des, Moines, Hancock, Hardin, Howard, Kossuth, Wright
Whooping cough	4	13	14	Iowa, Mills, Polk
Brucellosis	9	7	3	Scott
Chickenpox	808	877	446	Clay, Des Moines, Dubuque, Polk, Scott
Meningococcic meningitis	0	0	1	
Mumps	227	154	253	Buena Vista, Clay, Polk, Scott
Poliomyelitis	0	0	1	
Infectious hepatitis	27	29	199	Polk, Scott
Rabies in animals	12	20	39	Johnson, Washington
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	37	32	25	For the state
Syphilis	45	70	55	For the state
Gonorrhea	109	157	96	For the state
Histoplasmosis	4	21	1	Dallas, Polk, Wapello, Warren
Food intoxication	0	0	0	
Meningitis (type unspecified)	0	0	0	
Diphtheria carrier	0	29	0	
Aseptic meningitis	1	0	1	Appanoose
Salmonellosis	5	0	0	Black Hawk, Jackson, Polk, Tama
Tetanus	1	0	0	Madison
Chancroid	0	1	0	
Encephalitis (type unspecified)	2	1	0	Linn Woodbury
H. influenza meningitis	0	0	0	
Amebiasis	0	0	1	
Shigellosis	1	1	6	Jonsson
Influenza	0	0	7858	

Iowa Association of Medical Assistants

So You Think Your Memory Is Poor

You can remember the face, diagnosis and treatment of the patient, his occupation and his wife's first name, but you can't remember his surname. It is embarrassing isn't it? A poor memory is a common failing, but it can be cured. You can develop a better memory IF YOU WANT TO. You have the ability—it only needs awakening.

What can a better memory mean to you? It may mean the difference between success and failure; it can bring you greater happiness; it can give you self-confidence; it will seem, at least, to raise your I.Q. (intelligence quotient); and it certainly will improve your P.Q. (personality quotient).

The difference between the person who uses his memory efficiently and the person who does not is a matter of technic. To be good at anything requires a technic that can be acquired, and having acquired it you can put it to good use.

The brain can be compared to a filing cabinet with drawers labelled "important" and "unimportant." Those things in which you are interested, you automatically sort and file in the top drawer of your memory as important; everything else you file in the bottom drawer. We often hear someone say, "I have a mind like a sieve." Don't we all? The remedy is to acquire the technic of plugging up the holes.

First, you must have a desire to improve your memory. Make a list of your reasons for developing a better memory. What would a better memory do for you? What are your goals?

Memory increases in proportion to the use we make of it. We learn by repetition—not by doing the same thing two or three times, or by watching someone else do it a time or two, but by performing the same task day after day and week after week. In our classroom days, we were taught that if we used a word three times, it would become part of our vocabulary. But just using it three times today doesn't mean that we will remember it tomorrow. We must use it three times tomorrow,

and three times the next day and the day after. Only then will we understand its meaning, and will it become a part of our vocabulary.

Be positive in your thinking. Be confident that you will remember, and immediately you become interested in developing your power to remember. Set your goal; do not let yourself be distracted; work until you reach your objective. You can acquire confidence in your ability if you sincerely *believe* that you will remember.

We forget the things we intend to forget—the things that are unimportant or boring to us. Psychologists say that we do not remember names and faces because we are too busy studying people's clothes or analyzing their diction. If you intend to remember Mr. Schultz, make sure that you learn his name correctly. Ask him to spell it, and repeat it to yourself several times. Write it down, and use it in your conversation with him. Then, mentally review his name and face at regular intervals, and while you are remembering, remind yourself of how the information will be useful to you.

When students have crammed for an examination with only one purpose in mind—passing the test—they forget what they have learned soon afterward, because they lacked the incentive to retain their knowledge.

Merely memorizing facts is a waste of time and clutters the mind. Memorize with a definite purpose. List five telephone numbers that are important for you to remember, and beside each one, list your reason for remembering it. If you are committing something to memory, it is important first to understand its meaning. Then the memorizing will be easier.

Brendon Byrne says, in his book *THREE WEEKS TO A BETTER MEMORY*, that we forget names and faces because we fail to observe physical features, color of hair, position of eyes, and anything unusual or distinctive about a voice or an appearance. We use only a small part of our total mental energy.

The development of imagery can be an effective memory aid. The senses are memory images. The memory of what you have seen is a visual image; the memory of a voice is an auditory image; an unpleasant flavor which you taste in imagination is a taste image; the memory of the feeling of cotton or fur is a touch image; and the recollection of the smell of roses is an odor image. If one type of imagery aids your memory more than another—

1963 Annual Meeting of IAMA
Burlington Hotel
Burlington, Iowa
May 3, 4 and 5

if for example writing a name helps you more than merely seeing it—use the technic which brings the most benefit to you. And the more senses you can employ and the more facts you can associate with any one image, the better will be your chance of retaining it.

Have you ever forgotten the name of a patient, but have remembered exactly where his record is filed? You can close your eyes and see the record in the middle file drawer with the tab on the upper right-hand side of the file-folder. You have done so because you focused your attention on what you were doing while you were filing. You *intended* to remember what you were filing and where it was filed, and you associated it with other things in the file. The "Wyman" file is easy to pull or insert because it is the very last folder in the W's. You have two Robert Smith families with the same middle initial, but it is easy for you to remember which family's folder you have filed first because you remember that each is filed according to the wife's first name (Janice comes before Mary in the alphabet).

Dr. Joyce Brothers won \$64,000 because she made use of her memory. She tells the story of that project, because it was a project for her, in *TEN DAYS TO A SUCCESSFUL MEMORY*, a book which she co-authored. It is a fascinating story, and shows what can be done when there is desire and intent.

If you would improve your powers of retention, we suggest that you go to your local library for that book, or the one previously mentioned. You have nothing to lose and much to gain!

—HELEN G. HUGHES

Some Answers to "Silent Spring"

Frederick J. Stare, the famous nutritionist at Harvard, in the January, 1963, issue of *NUTRITION REVIEWS*, has replied very effectively to Miss Rachel Carson's controversial book *SILENT SPRING*. Dr. Stare starts by quoting a portion of a warning issued in 1956 by James R. Killian, Jr., Ph.D., President of the Massachusetts Institute of Technology: "the hazard we face is that science will be so identified with destruction, and so hemmed in by security considerations, that its real significance will be lost, its ranks weakened, and its creativity diminished. If American science is to continue to prosper, if it is to continue to attract its proper complement of creative and gifted minds, scientists must combat the notions that science engineering are incompatible with the disciplines of the great humanities, that they are narrowly materialistic and destructive of human values."

Dr. Stare points out that research in biological controls is not being ignored by either industry or the government. In fact, he says, there has been a recent dramatic break-through in which chemicals have been used to create a biological type of con-

trol: scientists of the U. S. Department of Agriculture claim to have halted reproduction completely in insects of several species (house flies, mosquitos, Mexican fruit flies) by the use of chemicals.

In reply to Miss Carson's assertion that there have been many deaths due to insecticides, Dr. Stare says that, as a matter of fact, that there has never been one medically-documented death due to the proper use of insecticides. Deaths due to improper use, according to the U. S. Department of Agriculture, totalled 89 last year. Improper use of any substance can cause harm or even death. For example, aspirin alone accidentally kills about 150 a year, most of them children. No one has yet suggested we do away with aspirin—or with automobiles, which kill thousands of people.

Dr. Stare then quoted Mr. Roswell Garst, of Coon Rapids, Iowa, describing him as the "farmer that all the visiting Russian agriculturalists and crop specialists make a bee-line for." During a lecture on commercial fertilizers and weed killers, Garst declared that the success of American agriculture was the result of a 'combination of the chemical industry with agriculture.'

Dr. Stare has greater respect for Miss Carson as a writer than as a scientist. He calls attention to the following emotion-pact words and phrases from her book: ". . . never ending stream of chemicals . . . now pervading the world . . . acting upon us directly and indirectly, separately and collectively. Their presence cast a shadow that is no less ominous because it is formless and obscure. . . ." This is lovely writing, he says, but the implication of harm to our health is just not true.

"The withdrawal or even curtailment of present chemical pest-control practices would within a single season bring back the 'worm-in-every-apple' and other equally unappetizing commodities to our tables. Along with this would be slow starvation of our population from half rations, and total disappearance of many foodstuffs." This opinion is voiced by F. A. Gunther, one of the authors of *CHEMICAL AND BIOLOGICAL HAZARDS IN FOOD*, a new book released early in February by the Iowa State University Press.

The book is a thorough-going appraisal of our present knowledge and the progress being made in solving the chemical and biological problems of hazards to our food supply.

Help your central office to maintain an accurate mailing list. Send your change of address promptly to the Journal, 529-36th Street, Des Moines 12, Iowa.

WOMAN'S AUXILIARY to the IOWA MEDICAL SOCIETY

1963 Annual Meeting, Des Moines

Program Theme: "Service Together"

MRS. ARTHUR C. RICHMOND, *Presiding*

Sunday, April 7

- 2:00-4:00 p.m. BOARD MEETING—East Room, Hotel Savery—state officers, councilors, and committee chairmen
- 6:30 p.m. DUTCH TREAT BUFFET—Orchard Room, Hotel Kirkwood—ALL board members, county presidents, convention committee chairmen and husbands

Monday, April 8

- 8:00 a.m.-4:00 p.m. REGISTRATION—Mezzanine, Hotel Savery
- HOSPITALITY ROOM—East Room, Hotel Savery—Hostesses: Mrs. C. A. Trueblood, Indianola, 1st vice-president, Mrs. C. J. Peisen and Mrs. H. L. Klockslem, Des Moines. ALL Physicians' wives welcome!
- 9:30 a.m. PROJECT BRUNCH—Terrace Room, Hotel Savery, honoring Mrs. C. Rodney Stoltz, the national president-elect, and past state presidents and chairmen of standing committees.
- HOSTESSES: Presidents of western area auxiliaries
- HOUSE OF DELEGATES
- Call to order—Mrs. A. C. Richmond, Fort Madison, president
- Invocation—Father P. M. Casady, St. Paul's Episcopal Church, Des Moines
- Auxiliary Pledge
- "I pledge my loyalty and devotion to the Woman's Auxiliary to the American Medical Association. I will support its activities, protect its reputation and ever sustain its high ideals."
- Welcome—Mrs. D. H. Kast, Des Moines, chairman of local arrangements
- Response—Mrs. G. J. McMillan, Fort Madison, state president-elect
- Presentation of Guests
- Announcements—Mrs. F. C. Bendixen, LeMars, area chairman
- Rules of Order—Mrs. G. A. Paschal, Webster City, parliamentarian
- Roll Call—Mrs. N. A. Schacht, Fort Dodge, recording secretary
- Minutes of 1962 Annual Meeting—Mrs. D. H. Kast, Des Moines, chairman

MEMORIAL SERVICE—Mrs. D. H. King, Spencer
Report of President

Reports of Officers and Committee Chairmen
Reports of County Presidents

Auditor's Report—Mrs. M. B. Cunningham, Norwalk, state treasurer

Presentation of AMA-ERF Awards—Mrs. W. C. Kasten, Fort Madison

Nominations for the 1964 Nominating Committee, and presentation of the Election Committee

Election of 1964 Nominating Committee

PANEL DISCUSSION: Moderator, Mrs. Henry Boe, Sioux City. Panel members: Mrs. S. M. Korson, Independence; Mrs. W. C. Kasten, Fort Madison; Mrs. W. H. Longworth, Boone

"POWER UNLIMITED"—Mrs. C. Rodney Stoltz, Watertown, South Dakota, national president-elect

12:30 p.m. "Spring Fashion Review" presented by Cow-nie Furs. Commentator: Mr. Charles T. Cownie

1:00 p.m. A FREE AFTERNOON

Area planning session in Parlor A and B at 8:00 a.m., Tuesday, April 9

Tuesday, April 9

8:00 a.m. to 12 noon REGISTRATION—Mezzanine, Hotel Savery

HOSPITALITY ROOM—East Room, Hotel Savery—Hostesses: Mrs. C. A. Trueblood, Indianola, 1st vice-president, Mrs. H. J. Smith, Woodward, and Mrs. H. G. Decker, Des Moines

9:30 a.m. HOUSE OF DELEGATES—Terrace Room

Call to order—Mrs. A. C. Richmond, president

Roll Call—Mrs. N. A. Schacht, recording secretary

Presentation of 1963-1964 Budget—Mrs. E. A. Vorisek, Des Moines, finance chairman

HOSPITALITY ROOM

Monday—8:30 a.m.-4:00 p.m.

Tuesday—8:30 a.m.-12:00 Noon

ALL PHYSICIANS' WIVES WELCOME

National President-Elect



Mrs. C. Rodney Stoltz, who is to be the guest of the Iowa Auxiliary at its annual convention this year, has been active in assisting organized medicine for a number of years. She has been president of the South Dakota State Auxiliary, and has served as chairman of various committees of the national Auxiliary.

One of her major interests is education. She is a member of the Watertown, South Dakota, school board and of several school-affiliated organizations on the state and national levels.

She majored in speech and dramatics at Nebraska Wesleyan University and worked as a secretary and bookkeeper before marrying Dr. Stoltz, who is an obstetrician and gynecologist. They have a son, Roger, 18, and a daughter, Gail, 16.

- D. L. Taylor, executive director, Iowa Medical Society
- Hazel T. Lammey, administrative secretary, Woman's Auxiliary to the Iowa Medical Society
- Mrs. Charles Skaugstad, Coralville, president, Woman's Auxiliary to the Iowa Chapter Student American Medical Association
- Presidents of Iowa Interprofessional Association Auxiliaries and other guests
- Presentation of Essay Contest Awards—G. H. Scanlon, M.D., president, Iowa Medical Society
- Presentation of Volunteer Health Service Award—Mrs. N. W. Irving, Des Moines, Community Service Chairman
- President's Acceptance—Mrs. G. J. McMillan, Fort Madison
- Presentation of Past President's Pin—Mrs. B. F. Kilgore, Des Moines

CADUCEUS CAPERS

Tuesday, April 9, 9:00-12:00
Grand Ballroom, Hotel Fort Des Moines

Benefit Dance for
Woman's Auxiliary
Health Educational Loan Fund

Don Hoy's Orchestra

Standard Medical and Surgical Company will
sponsor the social evening from 8:30

- 1:30 p.m. MUSIC—Roosevelt High School Concert Chorus, Miss Laura Duncan, director
 2:00 p.m. SPEAKER—Ernest B. Howard, M.D., assistant executive vice-president, American Medical Association, Chicago, Illinois

ADJOURNMENT

- 3:30 p.m. EXECUTIVE COMMITTEE MEETING, East Room, Hotel Savery
 7:00 p.m. BANQUET—Grand Ballroom, Hotel Fort Des Moines
 9:00 p.m. CADUCEUS CAPERS—Benefit Dance for the Woman's Auxiliary Health Educational Loan Fund, Grand Ballroom, Hotel Fort Des Moines

Legislative Ladies League Tea

Polk County Medical Auxiliary welcomed the Iowa Legislative Ladies League to the capitol city at a tea January 29 in Mott Auditorium, at the Y.M.C.A.

Mrs. R. H. Foss, president of the Polk County Medical Auxiliary opened the program with a brief welcome, and then introduced Mr. Oliver Field, of Chicago, director of the Department of Investigation of the American Medical Association. His topic "Medical Quackery" revealed some of the many "quack cures" seeking to ally themselves with medical science, and the effort being made by medicine to expose and seek punishment for the "quack." He displayed many advertisements, items and pieces of equipment which have been proven "quackery." In many instances these frauds have brought punishment, but he warned there seem to be others to take their place immediately, and that many unsuspecting and often desperate people still fall victim to them, regardless of a concerted effort at public education.

The many committee members who cooperated made this an outstanding occasion.

R.S.V.P.

Yes, please *do* answer the invitation you and your husband will be receiving this month to the Health Education Loan Fund's benefit dance on April 9. This is our only fund-raising project for the year, and, if we are to continue our successful project of helping girls—and boys—to become nurses and medical technologists, we *must* have a record-breaking response from the tickets enclosed in your letters.

The committee, of course, hopes to see you at the Hotel Fort Des Moines for an evening of sociability, through the courtesy of the Standard Medical and Surgical Company. But, even if it is impossible for you to attend, please use the ad-

dressed envelope you will find with the ticket to mail your check promptly. As we have many applications for financial assistance—partly, because the tuition rates at schools of nursing are following the upward trend of all colleges—we feel your response this year may "make or break" the Loan Fund.

So—R.S.V.P. and HELP your H.E.L.F.

The Need for State-Wide Motor Vehicle Inspection

The national need for mandatory automobile checks has been strongly indicated by the findings of the first scientific study of its type ever made on the subject, and just published by the Institute for Regional and Urban Studies at Wayne State University, in Detroit. These and related points have been disclosed in a pamphlet entitled, "Motor Vehicle Inspection—Current Information, Measurement and Research."

The Wayne University project was designed to determine (1) whether there is a relation between the type of inspection system and the motor vehicle accident death rate, and (2) the nature of that relationship, if any.

The report declares: "When the various states are categorized by inspection status on a four-point scale, there appears to be a clear relationship between low vehicle death rates and rigor of inspection system. The extreme importance of vehicle inspection can be summarized by saying that if between 1948 and 1960 *all* states had had vehicle death rates as low as those states with state-owned vehicle-inspection systems, 168,381 Americans would not have died in motor vehicle accidents. This indicates that it may be possible to save almost 15,000 lives a year, if we can isolate the factors accounting for the differential and apply our knowledge throughout the United States."

Drs. Albert J. Mayer and Thomas F. Hoult, of the Wayne University group, regard the research results as an important guide for state legislatures endeavoring to decide on the pros and cons of automotive safety legislation. They also regard the work as a guide for safety organizations pondering support of such state regulations.

Nothing Serious

If Patrick Henry thought taxation without representation was so terrible, he should see it with representation.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

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IOWA MEDICAL SOCIETY



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- S.U.I. Clinical Pathologic Conference, page 230

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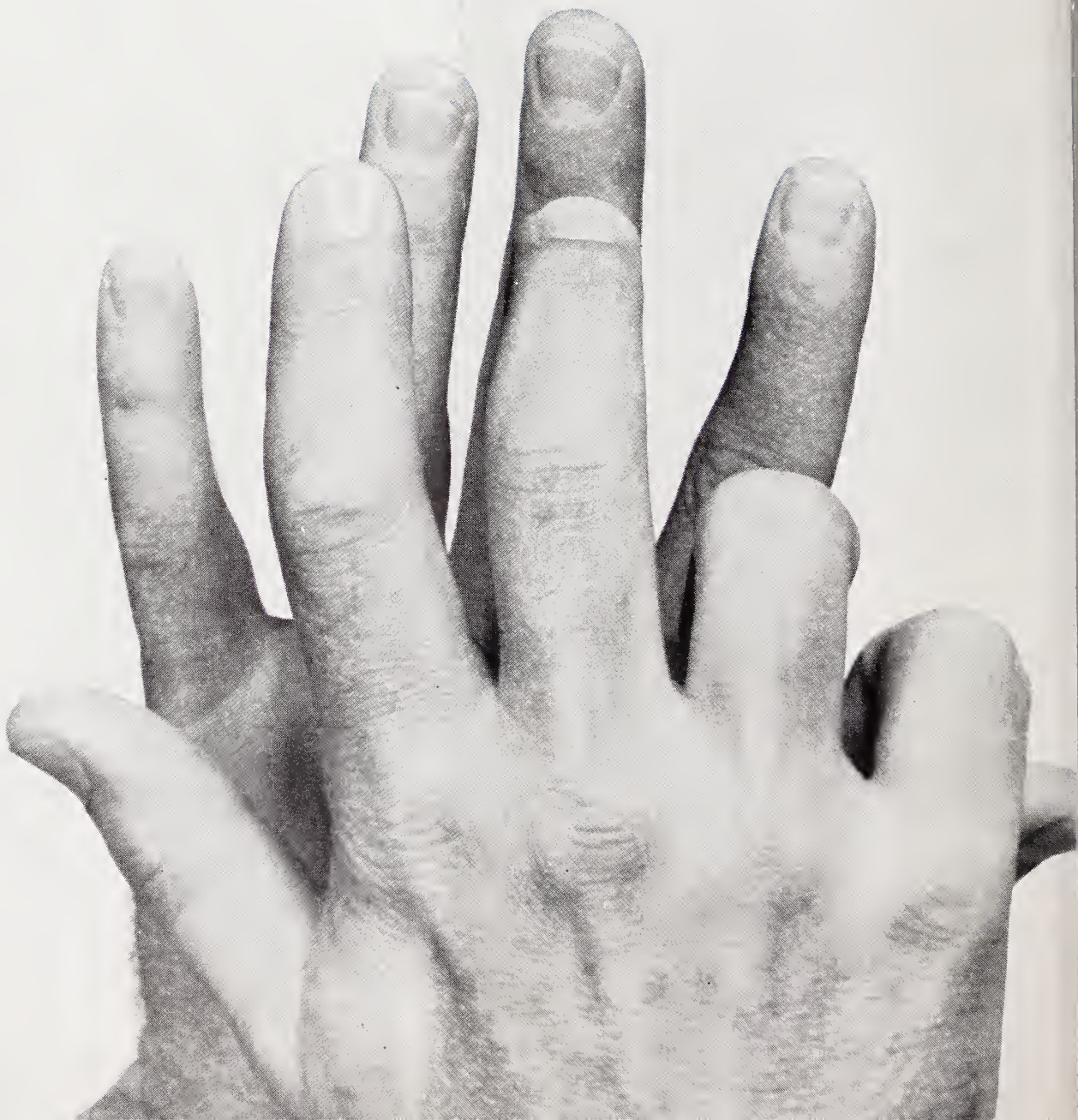
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refractory to other measures

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In *Hemophilus Influenzae* Pneumonia^{3,4,13,14}

Because the invading organism is usually sensitive to CHLOROMYCETIN, this agent is generally effective in pneumonias caused by *H. influenzae*.

In Staphylococcal Pneumonia^{1-8,13}

CHLOROMYCETIN continues to remain effective against many resistant strains of staphylococci, and—alone or in combination with other antibiotics—should be considered when other antistaphylococcal drugs are ineffective.

In Acute Epiglottitis^{4,10,11}

This condition is most often caused by *H. influenzae*, most strains of which are sensitive to CHLOROMYCETIN. Therapy should be instituted at once, since the disease may progress from the first symptoms to a severe respiratory obstruction in four to six hours.

In Pneumonias Due to Gram-negative Bacilli⁹

Because of its broad-spectrum activity, CHLOROMYCETIN is often effective in pneumonias caused by sensitive strains of *Aerobacter*, *Proteus* of various species, *Paracolonobacterium*, and other gram-negative pathogens encountered with increasing frequency in serious respiratory tract infections.

In Staphylococcal Empyema¹²

The infiltrating lesions of staphylococcal empyema are often difficult to eradicate. While CHLOROMYCETIN should only be used when the infection has been resistant to treatment with other antistaphylococcal drugs, therapy with CHLOROMYCETIN, in conjunction with surgical procedures, will often bring favorable results.

CHLOROMYCETIN (chloramphenicol, Parke-Davis) is available in various forms, including Kapseals® of 250 mg., in bottles of 16 and 100. See package insert for details of administration and dosage.

Warning: Serious and even fatal blood dyscrasias (aplastic anemia, hypoplastic anemia, thrombocytopenia, granulocytopenia) are known to occur after the administration of chloramphenicol. Blood dyscrasias have occurred after both short-term and prolonged therapy with this drug. Bearing in mind the possibility that such reactions may occur, chloramphenicol should be used only for serious infections caused by organisms which are susceptible to its antibacterial effects. Chloramphenicol should not be used when other less potentially dangerous agents will be effective, or in the treatment of trivial infections such as colds, influenza, or viral infections of the throat, or as a prophylactic agent.

Precautions: It is essential that adequate blood studies be made during treatment with the drug. While blood studies may detect early peripheral blood changes, such as leukopenia or granulocytopenia, before they become irreversible, such studies cannot be relied upon to detect bone marrow depression prior to development of aplastic anemia.

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Change in Deanship

A college is fortunate when it has a good dean. When one good dean succeeds another, the college is especially fortunate. This happy circumstance existed last summer when Dr. Robert Hardin followed Dr. Norman Nelson as Dean of the College of Medicine at the University of Iowa. During the two month interval between the two administrations the college was directed very capably by Dr. Rubin Flocks.

Both deans were born in the same year, 1913. Dr. Nelson was born in Connecticut and Dr. Hardin in Iowa. Dean Nelson did his college work on the two coasts, M.D. at Southern California, M.P.H. and Dr. P.H. at Harvard. He interned at Los Angeles County Hospital and taught at Harvard and in the University of California. He was for a time assistant dean of the latter institution and immediately before coming to Iowa was Dean of Medicine at the University of Beirut in Lebanon. The Republic of Lebanon awarded him the Gold Medal of Merit.

Dean Hardin, after graduating with distinction in Liberal Arts, secured his medical education at the University of Iowa and after several years of army service returned to Iowa as an instructor in the College of Medicine. During his military service, 1941-1945, he rose from the rank of captain to that of lieutenant colonel. Among his important assignments were included those of liaison officer, British Army Blood Supply Depot, and director of ETO Blood Bank. After his return to Iowa he advanced from instructor to professor through the ranks of assistant and associate professor. From 1950-1959 he was assistant dean and from 1959-1962 was associate dean of the college.

Both Dean Nelson and Dean Hardin are members of various associations including, of course, the AMA.

During Dr. Nelson's nine-year career as dean, many important advances were made by the Iowa College of Medicine. The construction of the medical research section of the medical center has added greatly to the research output of the faculty, and the installation of a cobalt unit has furnished a new weapon to be used against cancer. The setting up of a program in agricultural medicine in cooperation with Iowa State University was another achievement.

Some important achievements were developed jointly by the outgoing and the incoming deans. Notable among these is the new curricular program of the college. The new schedule is adjusted on a five-term basis through the calendar year, and students are enrolled so that four-fifths are registered each term. This arrangement produces a better spread of educational opportunity in the clinics, and also increases considerably the total amount of clinical teaching material. Another important development which overlaps the two administrations is the new minimal care wing of the hospital.

In view of Dr. Hardin's excellent preparation and favorable personal qualities, it was not surprising that the faculty committee, after a canvass of leading persons over the country, agreed on him as the man best qualified to become dean. Neither is it surprising that President Hancher and the Board of Regents approved the committee's recommendation.

PROVOST HARVEY H. DAVIS



Dr. Norman B. Nelson



Dr. Robert C. Hardin

Departure of a Valued Colleague

Dr. Robert C. Hickey, professor of surgery and associate dean for research in the College of Medicine, State University of Iowa, resigned in the late autumn to accept a position as associate director of the M. D. Anderson Hospital and Tumor Institute and professor of surgery at the Texas Medical Center, in Houston, Texas. The M. D. Anderson Tumor Institute is one of the world's largest and most rapidly expanding institutions of its type.

Dr. Hickey served his rotating internship at the University Hospitals in 1942-43, immediately following his graduation from the Cornell University Medical College. After completion of his internship, he served for nearly three years in the Medical Corps of the U. S. Naval Reserve. The early portion of this period he spent in the Pacific Theater of operations, and during the latter part of his service, after returning to the continental United States, he had a period of intensive experience in clinical radiology. He returned to the University Hospitals in 1946 as an assistant resident in surgery, spent the following year, 1947-48, as an assistant resident in surgery at the Memorial Hospital for Cancer and Allied Diseases, in New York, and then returned to the University Hospitals as a trainee of the National Cancer Institute, and under these auspices completed his surgical residency. His experience during this long term residency program in the Department of Pathology and in Radiation Therapy helped to prepare Dr. Hickey uniquely for his subsequent clinical and investigative interests.

When the Veterans Administration Hospital in Iowa City was opened, in December, 1951, Dr. Hickey joined the staff and served as assistant chief of surgery until July, 1953. He then returned to the University Hospitals staff of the College of Medicine as an Associate Professor, and was appointed professor of surgery in July, 1957. He became associated with the dean's office, in an administrative capacity, in 1955, first as assistant dean for research in the College of Medicine, and after 1959 as associate dean for research.

As an undergraduate student at the New York State Agricultural Experimental Station, and later as an undergraduate medical student, Dr. Hickey had participated in investigative problems. While he was still an undergraduate, he began basic work in the function of the posterior lobe of the pituitary with Dr. Kendrick Hare, and this project was carried on by both of these investigators during the time Dr. Hickey was an intern, Dr. Hare having meanwhile joined the College of Medicine faculty.

Because of his interest in clinical and experimental aspects of the control of cancer, he took an active part in the affairs of the American Cancer Society, and his work in connection with

these activities in the State of Iowa reflected continuous diligence and interest. He served as President of the Iowa Division of the American Cancer Society in 1959-60, and served for many years as director and chairman of its Research Committee. In 1959 Dr. Hickey was awarded the American Cancer Society's bronze medal and citation as "the Iowan who contributed most to cancer control."

His years in the dean's office, as assistant and later as associate dean for research, were characterized by sagacity and skill in obtaining funds for the College of Medicine, meticulous care and insight in planning new construction and programs, and agreeable relations with his many colleagues—in itself a tribute to his tact, wit, and fairness. During the last year of his association with the College of Medicine, Dr. Hickey was instrumental in the development of plans for the new Clinical Research Center, which is now under construction in Iowa City.

His prominence in the field of cancer control and investigation was recognized in recent years by his appointment to several of the important study and advisory committees of national agencies.

The loss of Dr. Hickey from the University community is compounded by the departure of his wife, the talented artist Rose Van Vranken Hickey, whose rise to prominence, chiefly in sculpture and water colors, has paralleled the growth of her husband's professional reputation.



Dr. Robert C. Hickey

Scientific Articles

Current Recommendations for the

Management of Rheumatic Fever

JOHN C. MacQUEEN, M.D. and
DOROTHY A. EHMKE, M.D.
Iowa City

THE PURPOSE OF this article is to present clinical observations based upon data collected in the Iowa Rheumatic Fever Program, and to offer recommendations for the care of patients with rheumatic fever.

The policies of the Iowa Rheumatic Fever Program were presented in an article published in this JOURNAL in November, 1960.¹ Therefore, details of these policies are not repeated here. Suffice it to say that a patient whose diagnosis of rheumatic fever is supported by the modified Jones criteria is enrolled in the program at the request of the family physician, but the patient remains under his medical supervision. The Iowa Crippled Children's Service supplies penicillin for prophylactic therapy, and provides a program of follow-up cardiac examinations in mobile diagnostic clinics or at the Pediatric Clinic of University Hospitals.

Information about the patients enrolled in the program is collected and recorded for clinical study. Reporting of data for the 1955-1959 period was included in the earlier article. Those data and the additional statistics collected through 1962 are the basis of this report.

A great deal of clinical information about rheumatic fever has been obtained from studies carried

out in units of the Armed Services and in cardiac clinics. All or most of these were carefully supervised studies of selected groups. It is suggested that there is a need for information concerning the diagnosis and care of rheumatic fever as carried out by physicians in the practice of medicine.

This report concerns a group of Iowa children whose rheumatic fever was diagnosed and cared for, and who were referred to this program, by 543 Iowa physicians. Admittedly, such a study cannot be a precise one, but if the program is properly designed, it can, with acceptable accuracy, provide a broad look at the disease and its care.

Figure 1 indicates the distribution of the children in the program by county of residence.

CLASSIFICATION OF PATIENTS

Soon after initiation of the Iowa program in 1955, it became apparent that there was a need for clinical classifications for use in this study. Such

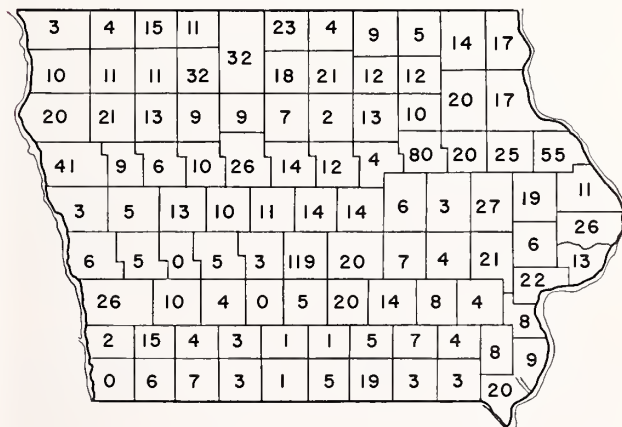


Figure 1. Distribution of children in the Iowa program by county of residence.

The physicians are members of the staff of the S.U.I. Department of Pediatrics. Dr. MacQueen is director and Dr. Ehmke is the pediatric cardiologist of the Iowa State Services for Crippled Children.

classifications are presented here, not because they are perfect but because the data in this report will be expressed in terms of these classifications.

Class I—Patients without evidence of carditis at the time of their initial episode or recurrence of rheumatic fever

Class II—Patients with evidence of carditis at the time of their episode of rheumatic fever, but who, within five years of the last episode, have no evidence of rheumatic heart disease by physical examination, EKG or chest x-ray

Class III—Patients with evidence of carditis at the time of their initial episode of rheumatic fever and who have evidence of rheumatic heart disease

Class IV—Patients with physical findings suggesting rheumatic heart disease, but who have no history of an episode of rheumatic fever

For the period 1960-1963, the program has provided penicillin for 1,327 children. Of these, 189 patients have not been examined or did not receive their cardiac examinations in the Crippled Children's Clinic. For the most part, they have received their care in local rheumatic-fever clinics, and therefore they are not included in this clinical study. These patients are referred to as "administrative admissions." The remaining 1,138 children have been followed by the Crippled Children's Service and constitute the "classified" patients included in the remainder of this report.

DATA CONCERNING PATIENTS ENROLLED IN THE PROGRAM

Although there are reliable figures to indicate that the incidence of rheumatic fever is decreasing, the yearly enrollment rate in this program has not varied a great deal. There has been no major shift in the number of patients enrolled who have or who do not have evidence of rheumatic carditis. Figure 2 indicates the number of new patients enrolled during each program year, by classification.

During a one-year period there may be an increase in the number of cases of rheumatic fever in one locality, but over a period of several years rheumatic fever remains a rather constantly recurring statewide health problem. Figure 3 shows the number of patients who were receiving penicillin each year from the beginning of the program in 1955 through 1962. As new patients were added and the majority of old patients continued (Classes I and II for five-year periods, and Classes III and IV indefinitely), the total number increased steadily.

Patients continue to be removed from the program, or to remove themselves, for reasons that vary from the valid to the ridiculous, from the necessary to the unfortunate. The major number of patients removed from the program during this period are those who, five years after their original illness, have no evidence of rheumatic heart dis-

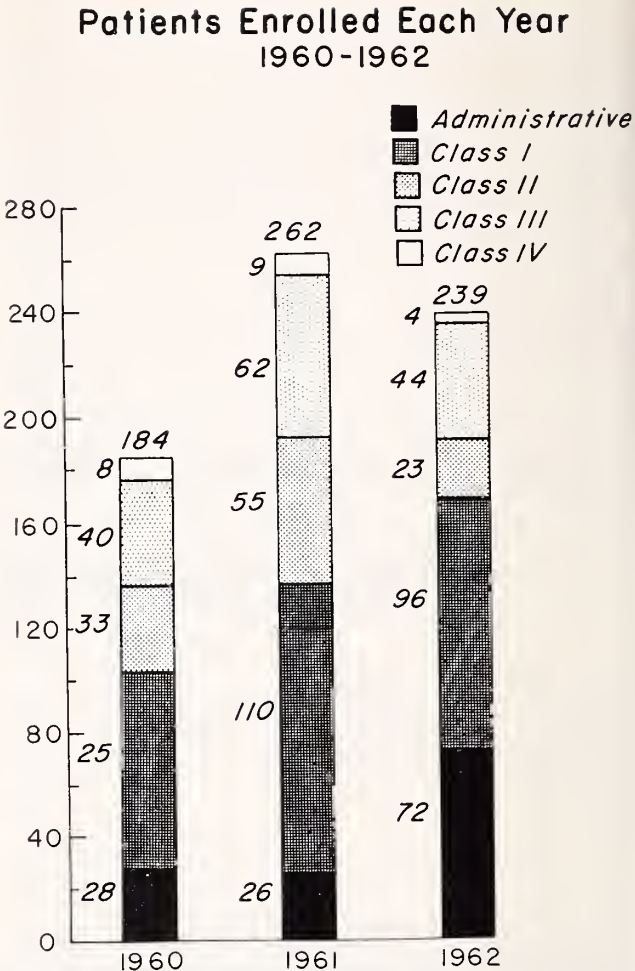


Figure 2. New patients enrolled in the program, 1960-1962, by classification.

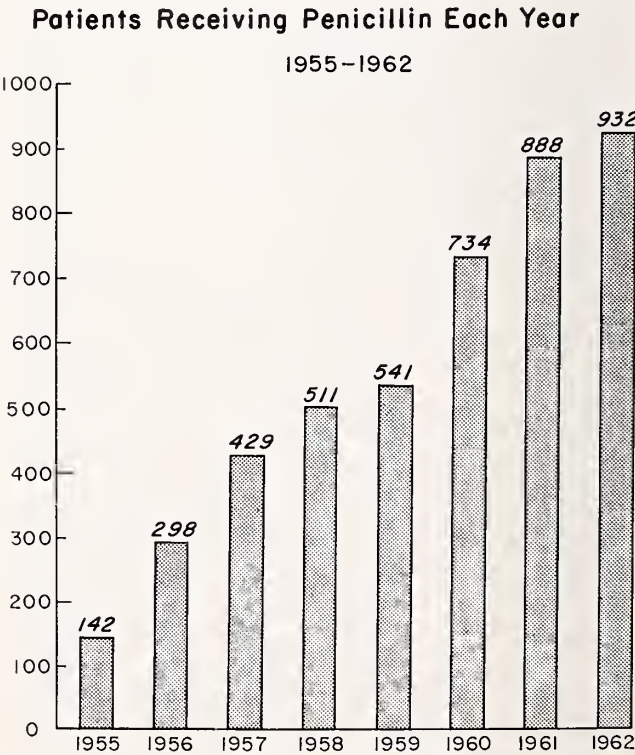


Figure 3. Patients in the Iowa program receiving penicillin each year, 1955-1962.

ease. The patients of greatest concern are those who have rheumatic heart disease and who have no other source of prophylactic medication, but who must be removed from the program because they are over 21 years of age. The annoying group of patients consists of those who withdraw themselves from the program because of their own lack of interest or understanding. A very few patients have been removed because of allergic reactions to penicillin. When this has occurred, the patients have been provided Syncillin or Gantrisin.

Table 1 lists the causes for discontinuing 343 patients from the program during the three-year period covered in this study.

TABLE I
CAUSES FOR DISCONTINUING PENICILLIN

Cause	Number of Patients by Classification			
	I	II	III	IV
Five years' medication completed	80	115	0	0
Failure to request renewal;				
lack of interest	17	24	19	2
Moved out of state	9	10	12	2
Over age	6	7	21	2
Diagnosis not established	3	2	3	0
Allergic symptoms	2	1	0	0
Death	0	0	5*	1**
Totals	117	159	60	7

* One died of injuries sustained in bicycle accident
** Died of hepatitis

CLINICAL OBSERVATIONS

Each patient enrolled in the program is followed carefully by means of cardiac examinations that include appropriate special studies. From the considerable information collected in this longitudinal study, seven clinical observations have been selected as being important and deserving of emphasis.

1. *The early diagnosis of rheumatic fever is not difficult.* There are those who think that the modified Jones criteria have not been so helpful as was originally hoped, but that has not been the experience of the clinicians involved in this study. The appearance of unusual signs or the unusual duration of some symptoms may require that the working diagnosis of rheumatic fever be changed. It is admitted that there are severe cases, tentatively diagnosed as rheumatic fever, which are later shown to be lupus, viral myocarditis, etc. But they are few, and in such situations no harm was done and, in truth, good medical care was given.

It is recognized that the use of the modified Jones criteria allows the diagnosis of rheumatic fever to be made in cases in which symptoms are mild. Particularly, it allows the diagnosis of rheumatic fever without evidence of carditis. Some experienced physicians skilled in the diagnosis of rheumatic disease do not consider such patients to

be candidates for prophylactic therapy. They arbitrarily decide that unless signs of carditis are present, the diagnosis of rheumatic fever is not allowable. This, however, is a position that as yet is not generally accepted.

Rheumatic fever is a clinical diagnosis, and as in all other cases of clinical diagnosis, there are variations in the signs and symptoms which make a final diagnosis less than precise. The information collected by this study leads us to conclude that the modified Jones criteria have proved to be a very usable yardstick for many physicians looking at many different patients showing many different signs and symptoms of rheumatic fever.

2. *The patients who have recurrences of rheumatic fever will have carditis or will not have carditis, depending upon whether carditis was present during the original illness.* It has been taught that a patient may have a bout of rheumatic fever without carditis, and at a later time have a recurrent bout of rheumatic fever with carditis. Indeed, this is sometimes given as a reason for the use of prophylaxis.

In this study, 436 patients had no evidence of carditis at the time of their original disease. Of those, 51 patients had 62 recurrences of their disease before prophylaxis was instituted. In only four cases was the recurrence marked by carditis.

Of the 667 patients who had evidence of carditis at the time of the original illness, 134 patients had 181 recurrences of their disease prior to prophylactic therapy. In only 12 cases did the patient have no evidence of carditis with the recurrence, and in 169 cases, or 93 per cent, the patient had some evidence of carditis with the recurrence.

The mimicking factor of rheumatic fever which results in a repetition of the initial type of rheumatic disease in recurrences has been described by others.²

3. *Rheumatic fever without carditis is a mild disease.* In this study, 385 patients who had had no evidence of carditis at the time of their original illness were started on prophylactic therapy prior to a recurrence. The great majority had a mild disease that lasted no more than a few days. A few patients had symptoms over a period of two to three weeks.

Four of these patients had recurrences after the institution of prophylaxis, but the recurrences were mild and there was no evidence of carditis. Obviously, none of these patients is in any way handicapped. It becomes apparent that the purpose of providing prophylaxis to the patient who has rheumatic fever without carditis is to prevent the recurrence of a mild form of rheumatic fever.

4. *Rheumatic fever with carditis, in the majority of cases, carries a good prognosis.* In this series, 533 patients who had evidence of carditis at the time of their original illness were started on prophylaxis prior to a recurrence. The evidence of carditis varied from a murmur diagnostic of carditis to extensive cardiac dilatation and failure.

Five years after the onset of their original illness, 294, or 55 per cent of these patients, had no evidence of rheumatic heart disease. Of those who did, the great majority did not have evidence of severe cardiac involvement. In 129 patients, or 24 per cent, a murmur of mitral insufficiency was the only evidence of rheumatic heart disease. Sixty-one patients, or 12 per cent, had murmurs indicating moderate valvular involvement, but had no radiographic or other evidence of severe disease and had no physical handicap. Only 49 patients, or 9 per cent, had valvular disease that limited their activity and resulted in a physical handicap.

Interestingly enough, many of the patients who had severe carditis at the time of their original illness were free of rheumatic heart disease after five years.

5. *The use of prophylactic therapy has been successful in preventing the recurrence of rheumatic fever.* To determine the effectiveness of prophylaxis, we must compare the incidence of the recurrence of rheumatic fever among patients who did not receive prophylaxis with the incidence among those who received it. Table 2 presents a comparison of recurrence rates among 1,103 patients who have been enrolled in this program during any part of the three-year period of the study.

6. *Rheumatic fever recurs predominantly in a five-year period after the acute bout of rheumatic fever.* A study was made of the length of time from the onset of the initial disease to the recurrence in patients who had recurrences prior to prophylactic medication.

Of the group of 436 patients who demonstrated no signs of carditis with their original illness, 51 patients had 62 recurrences of their disease. Table 3 indicates the number and per cent of recurrences within stated intervals after onset.

TABLE 2 RECURRENCES BEFORE AND AFTER PROPHYLAXIS		
	Onset of Disease to Beginning of Prophylaxis	Beginning of Prophylaxis to End of Study (1963)
Patients*	1103	1103
Patient years	1184	3352
Recurrences	243 (185 patients)	26 (17 patients)
Per cent of patients having recurrence	16.8	1.5
Number of recurrences per 100 patient years	20.5	0.8

* The 35 patients in Class IV are not included because no information is available regarding the onset of the original illness or the course of the disease. Each of two of these patients had an established bout of rheumatic fever with carditis prior to the institution of prophylactic therapy; these are presumed to have been recurrences because of the presence of rheumatic carditis prior to the episode.

TABLE 3 RECURRENCES OF CLASS I PATIENTS PRIOR TO PROPHYLAXIS		
Number of Recurrences	Number of Years After Onset	Per Cent of Total Recurrences
18	Within one year	29.0
27	Within two years	43.5
52	Within five years	83.8
62	Within ten years	100.0

TABLE 4 RECURRENCES OF CLASS III PATIENTS PRIOR TO PROPHYLAXIS		
Number of Recurrences	Number of Years After Onset	Per Cent of Total Recurrences
55	Within one year	30.4
90	Within two years	49.7
150	Within five years	82.9
181	Within ten years	100.0

Of the group of 667 patients who demonstrated carditis with their original illness, 134 patients had 181 recurrences of their disease. Table 4 indicates the lapse of time between the onset of original illness and these recurrences.

On the basis of these data, we are very sure that the critical period for the prevention of a recurrence of rheumatic fever is the first five years after the initial disease.

We are aware that many factors tend to decrease the possibility of recurrence. The observation that recurrences take place primarily within five years after the initial disease has been reported by others.^{3, 4}

7. *Mortality rates continue low.* Among the children followed in this program, there have been four deaths attributable to rheumatic heart disease during the period 1960-1963.

Each of these patients had severe rheumatic fever with carditis that caused extensive heart disease. One patient had several recurrences of rheumatic fever with carditis prior to prophylactic therapy. After prophylaxis none of the patients had a recurrence of rheumatic fever. The cause of death in each case was related to severe rheumatic heart disease.

RECOMMENDATIONS FOR CARE

The following recommendations are made for the management of the patient with rheumatic fever. They are based on the previously recorded clinical observations.

1. *The modified Jones criteria should continue to be used to establish the diagnosis of rheumatic fever.* The problems that occur in the use of the Jones criteria are those that occur in the making

of any clinical diagnosis. They are the problems that the individual physician must solve in interpreting what he sees, feels and hears. An example would be his problem as to whether a skin lesion has been caused by medication or by rheumatic fever.

A review of this program shows that the patients with very mild signs or symptoms of rheumatic disease did remarkably well, with few, if any, recurrences. This observation has been so remarkable that the following statement can be made: In case of doubt as to whether the signs and symptoms present fulfill the modified Jones criteria, it is better *not* to make the diagnosis of rheumatic fever. This statement is supported by a recommendation of the American Heart Association: "These criteria are not meant to substitute for the wisdom and judgment of the clinician. They are designed only to guide him toward a diagnosis of the disease with the suggestion that he follow carefully all questionable cases and restrict the diagnosis of rheumatic fever to illnesses which meet acceptable criteria."⁵

2. *If the symptoms of an acute illness reasonably fulfill the Jones criteria, a working diagnosis of rheumatic fever should be made.* Because rheumatic fever has, in the past, been equated with rheumatic heart disease, the diagnosis has often resulted in needless alarm. The first signs of rheumatic fever may be few. The disease may develop over the course of several days or of a few weeks. During this time, the complete picture will unfold. During the first three weeks of the illness, there is need for a program of care consisting of repeated physical examinations and appropriate laboratory studies. Multiple auscultatory examinations of the heart must be made. Temperature and sleeping pulse must be recorded. All of this is difficult, if not impossible, to accomplish without informing the family of the working diagnosis of rheumatic fever.

Information collected during this early period of illness may lead to a revision of the working diagnosis of rheumatic fever. This is particularly true of patients whose clinical signs are "polyarthritides, fever, and an elevated sedimentation rate—the weakest of all combinations of major and minor criteria."⁵

3. *The major obligation of the physician is to make careful clinical examinations and other appropriate studies to rule out carditis.* Accuracy in making the diagnosis of rheumatic carditis is important, and the difficulties in making the diagnosis need emphasis. Many murmurs that one hears in children who have signs suggesting rheumatic fever are not indicative of rheumatic carditis.

Rheumatic fever occurs at an age when innocent murmurs are common. The exact incidence of such murmurs is not known, but they are variously reported as occurring in 50-70 per cent of normal children.^{6, 7, 8} Innocent murmurs are character-

ized as systolic in time, and short, vibratory or musical in quality. They vary in intensity with respiration and/or with change in position, and the point of maximal intensity is at the pulmonary area or at the area between the apex and the lower left sternal border.

It must also be remembered that many children with fever have transitory heart murmurs which are systolic in time and are heard to the left of the sternum.

Notes on a patient's chart recording a previous cardiac examination and the presence or absence of a heart murmur are of great assistance in the appraisal of the murmur heard at the time of the illness.

Rheumatic carditis is frequently evidenced by the appearance of a cardiac murmur. The description of the murmurs of rheumatic carditis is beyond the intent of this report, and is well documented in available literature. It is important to emphasize that these murmurs are often transitory. They may be heard at one time and then disappear within a matter of hours. Therefore, multiple auscultatory examinations are required.

The diagnosis of carditis is infrequently made solely on the basis of a murmur. Tachycardia and other arrhythmias such as a "gallop rhythm" are important findings. However, many children with fever have tachycardia, and time must be allowed for the fever to subside before the finding of tachycardia is of diagnostic value. If the tachycardia persists after the acute febrile episode is over, and if sleeping pulses are persistently elevated, carditis is a likely explanation.

Radiographic examinations of the heart are of limited value in establishing a diagnosis of mild to moderate carditis. In cases with cardiac dilatation, there are often clinical signs of cardiac failure. Radiographic examinations are done mainly to aid in determining the response to treatment.

An electrocardiogram is helpful in the patient with questionable but not definite clinical or radiographic signs of carditis. A slight abnormality in the EKG, as the sole evidence of carditis, cannot be used to establish the diagnosis.

In summary, the accurate diagnosis of carditis is dependent upon repeated physical examinations of the patient during the acute illness, on the careful appraisal of heart murmurs, and on the appropriate use of x-ray and EKG studies.

4. *Laboratory studies as aids in the diagnosis of rheumatic fever must be carefully evaluated.* Until we have a laboratory test that is specific for rheumatic activity, the diagnosis of rheumatic fever must remain a clinical one. The antistreptolysin titer is one of the most overworked laboratory examinations. It should be stressed that an elevated antistreptolysin titer indicates only that the patient has had a previous streptococcal infection. In any group of children tested at a given time, there will be some with moderately elevated an-

tistreptolysin titers and a few with high antistreptolysin titers as a result of a preceding clinical or sub-clinical streptococcal infection. In a child who has other impressive evidence of rheumatic fever, an antistreptolysin titer of more than 330 units is of importance, but not diagnostic. An antistreptolysin titer lower than 330 units is not helpful, particularly in a child who otherwise has limited evidence of rheumatic fever. The antistreptolysin titer must be repeated after an interval of two to three weeks, and if the titer is rising, it can be assumed that the patient has had a recent streptococcal infection and that the infection is probably related to the illness.

In terms of cost and general availability to the physician, the erythrocyte sedimentation rate remains the most useful laboratory examination for the diagnosis of rheumatic fever. However, when significant heart failure is present, the sedimentation rate may be depressed. It may also be depressed by steroid therapy. Because the C-reactive protein is less sensitive to the effect of steroids and is influenced by fewer nonspecific factors than is the erythrocyte sedimentation rate, it is considered by some to be the examination of choice. Other laboratory examinations used in identifying rheumatic disease, although helpful, are not generally available and are no more dependable in establishing the diagnosis than are the three procedures discussed.

5. *A program of careful medical management should be established, and it should be predicated on the presence or absence of carditis.* At the present time, a physician who makes a diagnosis of rheumatic fever finds that the rules for care of the patient are as ill-defined as were the rules for making the diagnosis of rheumatic fever prior to the Jones criteria, but it is the belief of the authors that a program of management for the patient with rheumatic fever can now be stated.

MEDICAL CARE OF ACUTE ILLNESS

The type and duration of treatment of the patient with rheumatic fever is determined by the presence or absence of carditis. Without signs of carditis, the treatment is symptomatic. Salicylates— $\frac{3}{4}$ grain per pound per day for the relief of joint distress and fever—constitute the baseline of therapy. Many children are anorexic, and they must have adequate diets and supplemental vitamins.

If the patient has evidence of carditis, then the use of steroids must be considered. In spite of extensive and carefully controlled clinical studies, however, the exact role of steroid therapy in the treatment of rheumatic fever remains equivocal.

PHYSICAL ACTIVITY

The degree of physical activity to be allowed depends upon the presence or absence of carditis

and upon the duration of the symptoms of arthritis.

There are excellent cardiac centers that recommend the early ambulation of the patient in spite of laboratory evidence of continuing rheumatic activity, if there is minimal or no evidence of carditis. Prolonged bedrest in the hospital or at home, followed by restriction of physical activity, is no longer advised, just as it is no longer recommended for the patient who is convalescing from myocardial infarction. During early convalescence from rheumatic fever, physical activity is tailored to prevent tachycardia or fatigue. After a few weeks, activity that does not result in fatigue is permitted.

The following are presented as reasonable guidelines for physical activity:

The child who has no evidence of rheumatic carditis may be up and about his home in two weeks' time; he can be allowed limited activity in a month's time; and he can return to full activity in two months' time.

The child who has evidence of rheumatic carditis will be at bedrest for two to three weeks. If the physical signs and laboratory studies show progressive improvement, he can be up and about the home in one month's time; in two months' time he can attend school in limited fashion; and in three months' time, he can attend school regularly but should not participate in competitive sports.

FOLLOW-UP EXAMINATIONS

The patient without evidence of carditis will profit from an examination once a month for three months, and then an examination six months later. Thereafter, examinations at yearly intervals are in order for as long as prophylactic therapy is given.

The patient with mild to moderate rheumatic heart disease will benefit from examinations once a month for six months after the conclusion of his acute illness, and at three-month intervals during the following year. If the murmur is decreasing and there is no laboratory evidence suggesting residual carditis, yearly examinations during the following five years will constitute adequate supervision.

The patient with severe rheumatic heart disease must be followed carefully. Surgical correction of valvular lesions should be assessed individually for each patient, and whether or not surgery is recommended should depend upon the type and degree of involvement and upon the surgical procedure available.

PROPHYLAXIS

It is recommended that any patient who is diagnosed as having rheumatic fever without carditis should receive prophylactic medication for a five-

year period.* It should be restated that the intent of this prophylactic care is to prevent the recurrence of episodes of rheumatic fever without carditis.

It is recommended that any patient who has rheumatic fever with carditis receive prophylactic medication for five years. If, at the end of that time, he has had no recurrence of rheumatic fever and has no evidence of rheumatic heart disease, prophylactic medication may be discontinued.

It is recommended that all patients who have rheumatic heart disease receive prophylactic medication indefinitely.

It is very likely that in the foreseeable future it will be decided that patients who have rheumatic fever without carditis shall be given penicillin prophylactically for a period of perhaps a

* We are aware that these recommendations differ from those of the American Heart Association—that "All individuals with . . . should be placed on continuous prophylaxis, until new knowledge makes this recommendation invalid." We have found the recommendation so indefinite as to be an impractical guideline for this program of prophylaxis.

The above recommendations are, therefore, made for this program. They are based on the observation presented in Item 6, that rheumatic fever recurs predominantly in a five-year period after the initial episode.

In accordance with these recommendations, 195 patients have been removed from this program during the last three years (Table 1). None of these patients had evidence of rheumatic heart disease five years after his original disease. Only one case of a recurrence has been reported. That patient had the recurrence of mild rheumatic fever without carditis.

year, and thereafter shall be given penicillin when they have evidence of respiratory disease. That decision has not yet been made, however, and therefore it is not given as a recommendation.

SUMMARY

Until the recent past, articles concerning rheumatic fever emphasized the unpredictability of the disease. Recently, the emphasis has changed. We now can think of rheumatic fever as a disease that runs a fairly orderly and predictable clinical course. It is a disease that can be favorably altered by a program of prophylaxis. It is a disease that, if properly treated, results in a low morbidity and a low mortality.

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Staff members have moved into this new two-story research addition to the State Psychopathic Hospital at the State University of Iowa. The new addition, which connects the east and center wings on the north side of the hospital, was built at a cost of \$520,000, with \$284,465 of this sum coming from state appropriations and \$235,535 from the federal government. The ground floor of the new unit contains observation laboratories, an epidemiological statistical center, psycho-neurophysiological laboratories, four sound-proof laboratories, several multi-purpose laboratories, an electronics and equipment shop, and a classroom that seats 140 persons. Two office-laboratories, a section for experimental animal work, staff offices, and six laboratories for the study of human behavior and biochemical factors in mental disorders are located on the second floor. Passageway at right leads to a two-story Emotionally Disturbed Children's Unit complete in December 1961.

Nerve Conduction Studies and Electromyography in Diagnosis of Neuromuscular Disorders

R. W. FINCHAM, M.D.

Illustrations by ALAN O. HAGE

DIFFERENTIAL DIAGNOSIS in neuromuscular disorders is often difficult, and clues which will help to distinguish a primary muscular from a neural disorder are valuable in both prognosis and management. Polymyositis, an inflammatory myopathy, is often much benefited by steroids, but it must first be recognized and distinguished from the other myopathies. A refined measurement of muscle response to Tensilon, in testing for myasthenia gravis, is useful when manifestations of weakness are subtle and response to therapy is inconclusive. Furthermore, the identification of early neuropathies may be very helpful in diagnosis. Localization of the site of impaired peripheral-nerve conduction is of great value in such conditions as the "carpal tunnel syndrome." Early recognition of denervation or of reinnervation is of value in the management of peripheral-nerve injuries, particularly in reference to the timing of surgical intervention.

This paper will give a brief review of two clinical neurophysiologic technics that are now available as supplements to clinical evaluations. These technics are electromyography and nerve conduction velocity determinations (motor and sensory). An outline of some of the basic physiologic and pathologic concepts underlying interpretation of the findings of these studies will be provided.

ELECTROMYOGRAPHY

Electromyography is a technic based on an anal-

Dr. Fincham is a research neurologist at the Neurosensory Center of the Department of Neurology of the S.U.I. College of Medicine. He wishes to acknowledge his indebtedness to Maurice W. Van Allen, M.D., his teacher in the technics of electromyography, for his valuable suggestions and criticisms, which helped him greatly in the preparation of this paper.

The Neurosensory Center is supported by Program Project Grant No. B-3354 of the National Institute of Neurological Disease and Blindness of the United States Public Health Service.

ysis of the electrical activity which always precedes contraction of skeletal muscle. Voltage changes in the muscle are recorded from surface or needle electrodes, then amplified and displayed on an oscilloscope, and finally converted to sound for auditory analysis. The electrical event of muscle activation in motor units is termed the muscle-action potential (Figure 1). The motor unit is said to consist of a single motor neuron, its axon, and all the muscle fibers innervated by that single axon. Buchthal has called it the functional unit in reflex or voluntary movement.¹

Lambert has stressed the importance, in the actual performance of electromyography, of testing several areas of the muscle under study, and of recording (1) insertion activity,* (2) activity, if any, in the resting muscle which is normally silent, and (3) activity with varying gradations of voluntary effort.² Interpretation of the electromyogram is based on several characteristics which are especially useful in separating neurogenic from myogenic pareses. The first of these features relates to the electrical activity recorded during maximum effort. Figure 1 illustrates the normal motor unit and its electrical activity. The record of single motor unit activity is shown, and it should be noted that such a pattern is obtained with minimal muscular contraction. Increasing strength of contraction is produced by increasing the frequency of neural and hence muscular discharge to a maximum of perhaps 40 or 50 impulses per motor unit per second. Strength of contraction is further enhanced as more and more motor units are activated. The identity of individual motor units then disappears into an "interference pattern." The interference pattern is less well developed or is absent in neurogenic pareses. In myopathic pareses, contrastingly, the interference pattern is well preserved even in the face of advanced weakness. Buchthal¹ reports that this pattern persists in myopathies affecting 80 per cent of the muscles tested, even when the paresis is so se-

* When stimulated by needle insertion, normal muscle produces a brief, short-lived burst of electrical discharges.

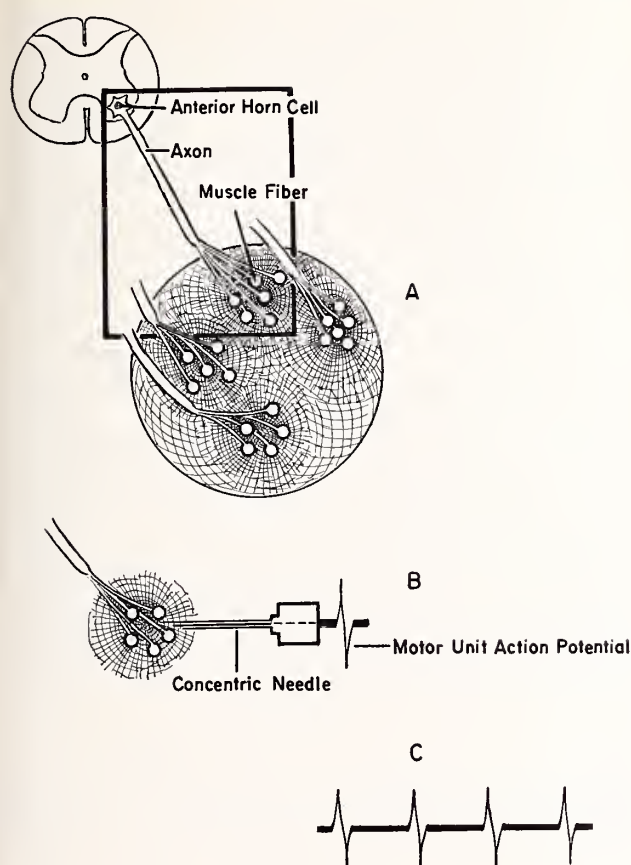


Figure 1. A. Motor unit. B. Muscle action potential. The electrical event, the muscle action potential, is represented for a motor unit in this illustration. This activity must always precede the contraction of the muscle fiber. This electrical potential is a summation of volume conducted potentials from many fibers belonging to the same motor unit. C. Single repetitive motor unit activity such as might be obtained in a normal muscle with slight muscular contraction when only one motor unit is functioning.

vere that movement against gravity is impossible. This pattern differential is diagramed in Figure 2.

A second diagnostic feature of electromyography relates to the duration of the recorded action potential. This is the time interval between the initial deflection from the base line and the point at which the final deflection again returns to the base line. Since there is a wide range of values to be found in normal muscle, at least 20 different motor units must be sampled to compute the mean duration of the action potential. This variability within the same muscle is attributed partly to differences in extent of innervation zones for different motor units (Figure 3) and partly to a varying position of the recording electrode relative to these zones (Figure 4). Other factors influencing action-potential duration include the type of electrode used, the age of the patient and the temperature of the muscle.

Because of the wide variations in duration of the action potentials in normal muscle, this determination is of limited value. In the dystrophies,

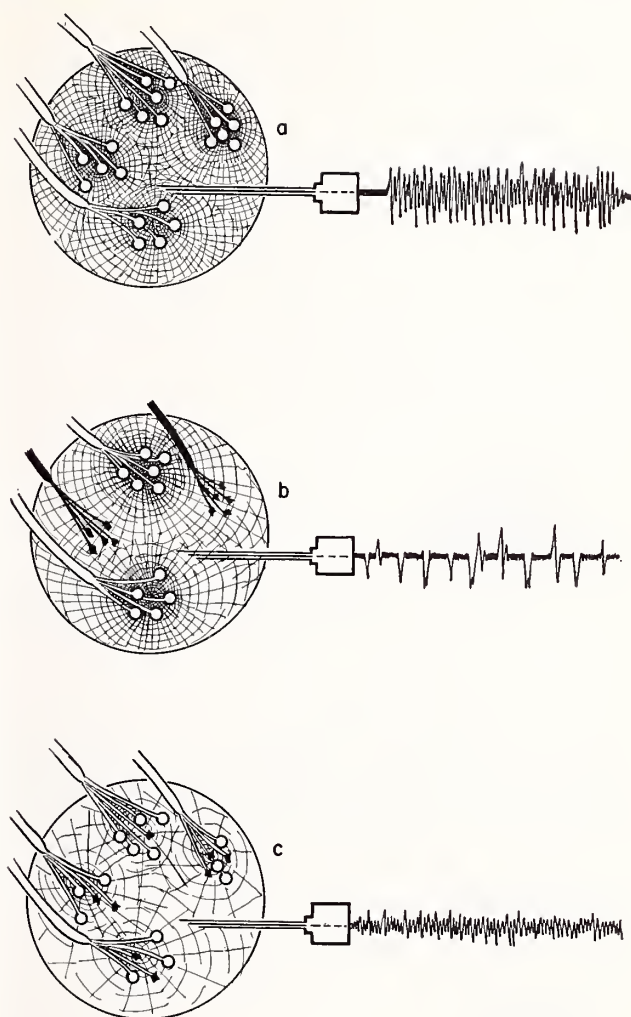


Figure 2. (a) Normal EMG interference pattern with maximal muscular effort. The action potentials of single motor units disappear in the maze of nearly simultaneous motor unit discharges. (b) Neurogenic paresis: Entire motor units drop out with nerve fiber denervation. The resulting loss of motor units prevents the appearance of an interference pattern. (c) Myogenic paresis: Most of the motor units are preserved, but there is a loss of some fibers in each motor unit. The interference pattern is preserved, but there is considerable reduction in potential amplitude.

the mean duration is reduced, whereas in neural disorders the duration tends to be increased. The increased duration of action potentials in anterior horn disease has been attributed to central and peripheral axon sprouting, and this change in peripheral neuropathies is attributed to peripheral axon sprouting. It has been suggested that the reduced duration in the myopathies may be related to a shortening of the functional length of muscle fibers or to an increased propagation velocity along these fibers.³

A third measurable attribute of the action potential that is recorded in electromyography is the mean amplitude. It is determined by measuring the distance between the greatest positive and negative deflections. Because of a marked voltage

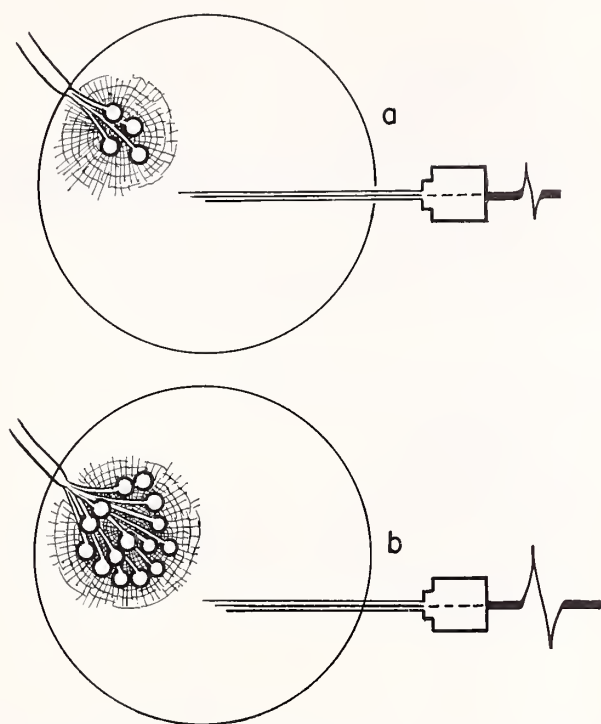


Figure 3. (a) The action potential of a small or compact motor unit will have a short duration of action potential. (b) The larger or more diffuse motor unit will produce an action potential of longer duration because of conduction effects.

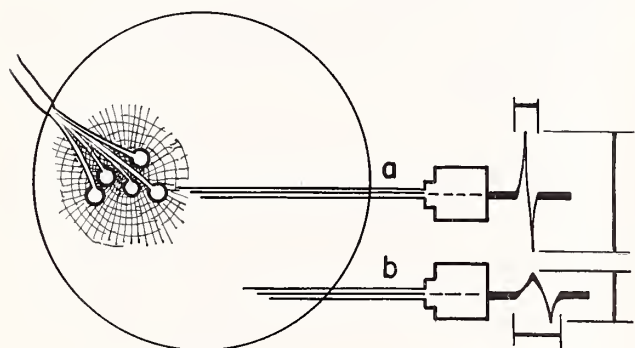


Figure 4. Increasing the needle distance from a motor unit results in a lower potential amplitude (b), and prolonged duration of action potential (b).

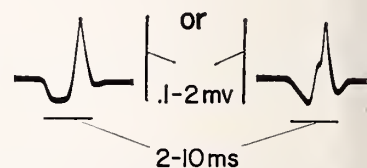
difference in motor units within the same muscle, this feature, like the second, requires multiple measurements and careful interpretation. Neuropathic pareses (anterior horn cell and peripheral nerve involvement) often show increased mean action-potential amplitudes, whereas myopathic pareses show decreased amplitudes.

Another electromyographic feature that is helpful in distinguishing muscular from neural dysfunction is the incidence of synchronization. This feature is sought with more than one recording electrode. The extra electrode or electrodes are inserted beyond the established territory of the motor unit. If simultaneous recordings of the measured action potentials are synchronous at inter-electrode distances greater than 25 per cent of the expected normal, abnormal synchronization is

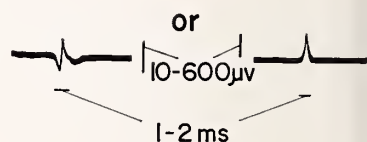
present.³ Synchronization appears in neuropathic dysfunction, and with a much greater frequency in anterior horn cell disease than in peripheral neuropathy. Synchronization is not seen in the myopathies. A number of mechanisms have been offered in explanation of this phenomenon. These include synchronous firing from diseased motor neurons, selective destruction of the small motor units and reinnervation of muscle fibers of other motor units with collateral branches as a peripheral event.

A fifth feature of electromyography relates to the presence and type of polyphasic potentials (Figure 5). These are waves with more than four phases. This wave form is seen in some of the fasciculations in chronic anterior horn cell disease. Low voltage polyphasic potentials appear with voluntary effort to contraction as the earliest manifestation of reinnervation (nascent action potentials in reinnervation). On the average, polyphasic potentials constitute 3 per cent of muscle potentials in the normal. Two types of polyphasic waves can be distinguished. One type has a spike com-

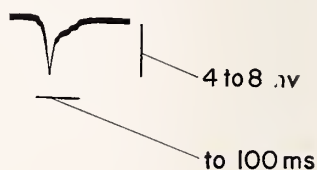
Normal Motor Units



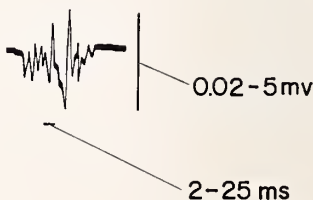
Fibrillation Potential



Positive Wave



Polyphasic Potential



Nascent Motor Unit

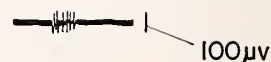


Figure 5.

ponent that is shorter than the spike potential duration of normal motor unit di- or triphasic potentials. The other type has a spike potential of the same duration as the normal motor unit di- or triphasic potential.¹ This latter type is seen mainly in neurogenic paresis (grouped polyphasics). The former appears in both neuropathic and myopathic disorders.

The sixth and most important electromyographic feature relates to the presence or absence of "denervation potentials." Such potentials are found in resting muscle. Two types of wave forms are described. The first are fibrillation potentials. They may be identified by their characteristic sound, and they usually are diphasic in form, with a short duration and a low voltage. The second potential of denervation is the positive wave which displays marked variations in voltage and duration.

Fibrillation potentials are thought to arise from the spontaneous discharge of single denervated muscle fibers. (The other potentials that have been discussed in this paper are produced by a summation of multiple fiber action potentials.) This explanation of fibrillation is compatible with the brief duration and small amplitude of the potentials. Fibrillation, as electrically defined, is the most important single feature of an electromyographic study. With limited exceptions, fibrillation is pathognomonic of denervation, and hence clearly classifies the disorder in question as neural in origin. These denervation potentials, however, may not be found in 20 to 30 per cent of totally or partially denervated muscles, even after a careful search.¹ Since severe myogenic paresis and inflammatory myopathies are capable of producing denervation potentials, a clear dichotomy is not always possible. The presence of denervation potentials in myopathies has been attributed to interruption of intramuscular nerves by connective tissue proliferation.

Fasciculations (visible fascicular twitching) may appear at rest in chronic motor cell or axonal dis-

ease. These are accompanied by large and often polyphasic potentials.

A summary of the differential diagnosis of myogenic and neurogenic pareses, in terms of the six electromyographic features just described, is shown in Table 1. The appearance of these features in the two categories of dysfunction are not constant findings, but rather they represent statistically frequent occurrences. The electromyographic findings must be interpreted in the light of a clinical understanding of the illnesses. Finally, a clear distinction between anterior horn cell disease and a more peripheral neurogenic disorder is impossible.

Electromyographic evidence of denervation appearing as spontaneous positive waves and fibrillation activity in the resting state provides early insight into the extent of nerve damage. Fibrillation may first appear between seven and 21 days after the nerve injury. If periodic examinations show fibrillation to be minimal and muscular response to electrical stimulation to be present, then the prognosis is good. A high incidence of fibrillation and the absence of muscular response to electrical stimulation or voluntary effort indicate a poor prognosis. Reinnervation can be observed by means of electromyography as a diminution of fibrillation activity, the development of small polyphasic nascent motor units, and the reappearance of motor units with voluntary effort. These changes may precede clinical evidence of recovery by several weeks. Although such information is often helpful prognostically, it is not infallible. Determination of strength duration curves should be kept in mind for the early detection of denervation, since this test may prove positive before electromyography.*

Detection of denervation potentials can be use-

* Strength duration curves are determined by plotting the intensity of a muscle threshold stimulus, expressed either in volts or milliamperes, on an ordinate, and plotting durations of current, expressed logarithmically, on an abscissa. Characteristic curves for denervation will thus appear, and the process of reinnervation can be followed graphically.

TABLE I
DIFFERENTIAL DIAGNOSIS OF MYOGENIC AND NEUROGENIC PARESES*

	Myogenic Paresis	Neurogenic Paresis
1. Pattern of action potentials during maximum voluntary contraction	Interference pattern is usually preserved but may sometimes be intermediate between this and single motor units	Single motor units or patterns less than an interference pattern
2. Duration of action potential	Decreased, especially in polymyositis	Increased
3. Amplitude of action potential	Decreased	Increased
4. Synchronization	Rare or absent	Frequent
5. Polyphasic potentials	Increased—predominantly "short" type	Increased—predominantly "grouped" type
6. Denervation potentials	In severe dystrophies only, or in myositic myopathies	Frequent

* Based on Buchthal,¹ and Humphrey and Shy.²

ful in localizing segmental, plexus or peripheral nerve involvement when this activity is considered in relation to dermatome or muscle innervation patterns. Root lesions may be distinguished by an involvement of erector spinae musculature that is not present in plexus or more peripheral derangements.

A more quantitative measure of progressive weakness with exercise, in myasthenia gravis, can be obtained by a combination of repetitive nerve stimulation (less than 40/sec.) and simultaneous electromyographic recording.¹ As stimulation continues, the affected muscles of the myasthenic patient will usually reveal progressive diminution of amplitude of motor unit action potentials. This abnormal response is eliminated by drugs having anti-cholinesterase activity.

Special mention should be made of the inflammatory myopathies that may show EMG patterns of both myogenic and neurogenic types. The neurogenic components, when present, appear as in-

creased activity on electrode insertion and as spontaneous denervation potentials. Polymyositis, dermatomyositis, scleroderma and lupus erythematosus are examples of these diseases.

A rather unique electromyographic pattern appears in myotonic dystrophy, and is nearly pathognomonic of the condition. It consists of bursts of rapid-firing potentials of short duration on needle insertion. Their activity, when converted to sound over the loudspeaker, is much like that of a dive bomber. A similar phenomenon may appear with mechanical stimulation in the above-mentioned inflammatory myopathies, but it is uncommon and the frequency of discharge in such cases does not vary as it does in myotonic dystrophy.

Mention should be made of the findings in disuse atrophy. No spontaneous activity is recorded. The incidence of polyphasic potentials increases, and there are no decreases, or only slight ones, in action-potential amplitude.

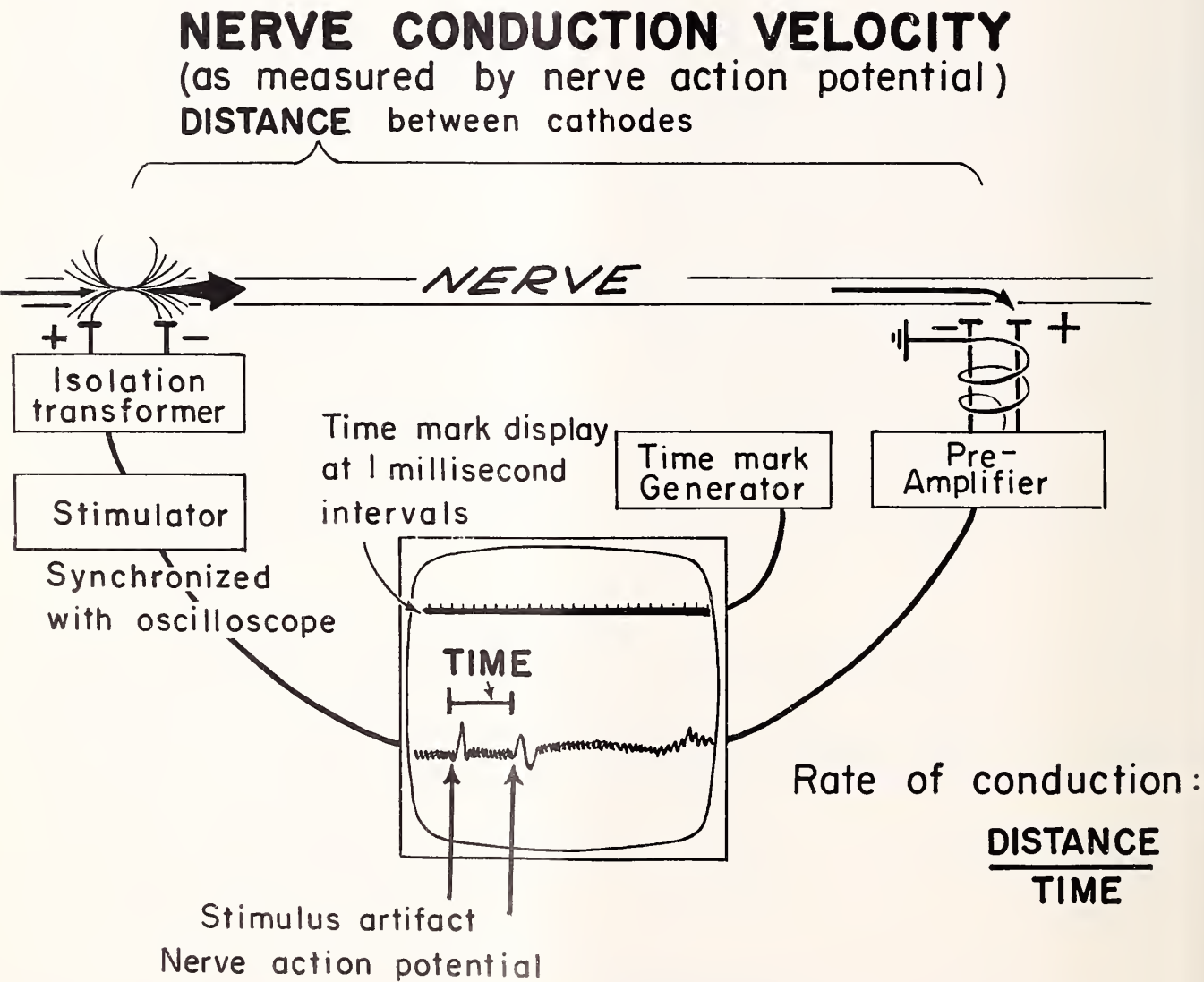


Figure 6.

NERVE CONDUCTION STUDIES

Techniques for measuring nerve conduction velocity were developed in the late 1940's.^{4, 5} Two determinations can be made. One method measures motor fiber conduction velocity (using the muscle action potential as the recorded end-point), and the other method determines sensory or mixed sensory and motor fiber conduction velocity (using the propagated nerve action potential as the recorded end-point). The two technics are illustrated in Figures 6 and 7. The illustrations point out that "sensory" nerve velocity determinations can be achieved with only a single site of stimulation, since they do not involve conduction delay at the myo-neural junction, as do the motor velocity studies (Figure 6). This delay of conduction at the myoneural junction can be circumvented in the studies of motor nerve velocity by stimulating the nerve at two sites. On the oscilloscope, each stimulus marks a time interval between the stimu-

lus artifact and the muscle action potential end-point (Figure 7). This is termed the motor latency. It includes the time required for nerve stimulation, the time of axonal transmission, and the time of myoneural transmission (not present in the sensory recordings). The slowing of transmission that takes place at the myo-neural junction is eliminated from the calculations if one determines two latencies and subtracts. When two sites of stimulation are not possible, the latency value may still give valuable diagnostic information, as for example in the carpal tunnel syndrome.

Stimulation of the usually tested nerves (median, ulnar and peroneal) often results in activation of both motor and sensory fibers. Activation of only sensory fibers has been achieved with stimulation electrodes about the second and fifth digits, for median and ulnar nerves respectively. In addition to velocity measurements, amplitude, duration, configuration and latency of the action potential are all evaluated. Table 2 lists the values

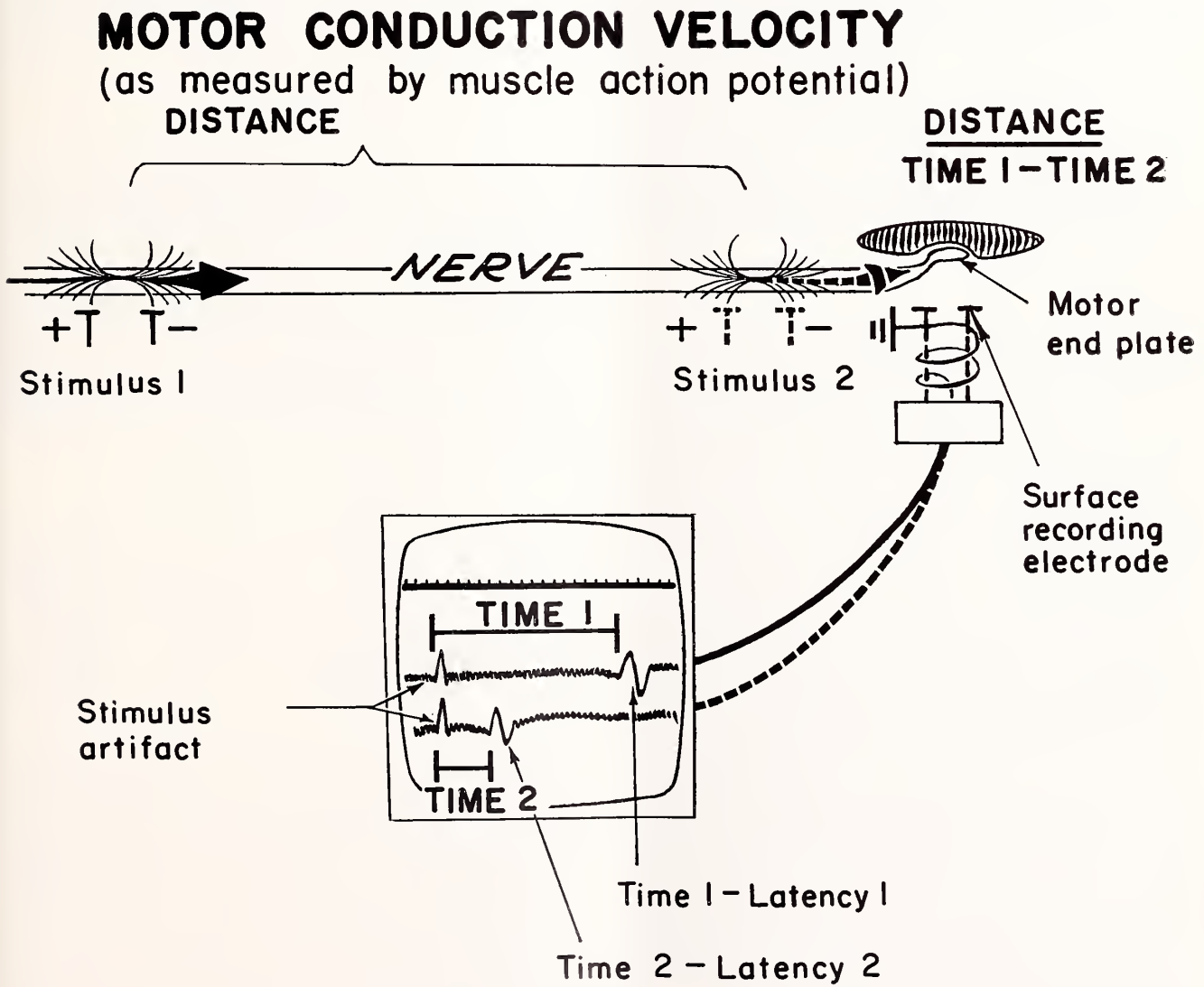


Figure 7.

TABLE 2
CONDUCTION VELOCITIES FOR MOTOR FIBERS⁶

Muscle	Mean Conduction Velocity (meters/second) With Standard Deviation
Median nerve (abductor pollicis brevis)	57.2 ± 4.2
Ulnar nerve (abductor digiti minimi)	56.2 ± 4.6
Peroneal nerve (extensor digitorum brevis)	49.7 ± 7.1

for conduction velocity determined by Thomas, Gilliat and Sears for motor fibers.⁶

The propagation velocities of sensory and motor fibers are similar. Normal motor response to nerve stimulation yields measurable voltage changes in the millivolt range, whereas normal nerve action potentials produce maximum voltage changes of perhaps 60 microvolts, as measured with skin electrodes. As a test of peripheral nerve function, the determination of motor nerve conduction velocity has been regarded as less sensitive than the determination of sensory nerve conduction velocity, since it measures transmission in the fastest surviving motor fibers. A nerve action potential is dependent on the passage of a synchronous volley of impulses beneath the recording electrodes, and so provides a more sensitive index of scattered fiber impairment within the tested nerve (Figure 8).⁷

Determination of conduction in sensory fibers may be helpful in distinguishing a lesion of the brachial plexus from a lesion of the cervical roots. The plexus lesion is distal to the dorsal root ganglion cell, and produces Wallerian degeneration and concomitant loss of sensory action potentials, even though the motor conduction velocity may be normal. Because the cervical root lesion is proximal to the cell body of the sensory fiber, Wallerian degeneration does not occur, and the peripheral conduction of the sensory action potential may be normal in the face of sensory loss.⁸ Appropriate choices of sites for stimulation, together with combinations of studies of motor and sensory conduction, may prove helpful in the localization of conduction impairment at the wrist and elbow.

Peripheral neuropathies are especially well evaluated by nerve conduction technics. Neuropathies show a slowing of conduction velocities. Mulder, Lambert, Bartron and Sprague have completed studies which suggest that alterations take place in the peripheral nerves of diabetic patients without clinical neuropathy.⁹ Slowing of conduction velocity has been shown to be a striking feature of infectious polyneuritis. The use of this technic can afford quantitative information about the improvement of neural function in recovering neuropathies. Electromyography alone often cannot pro-

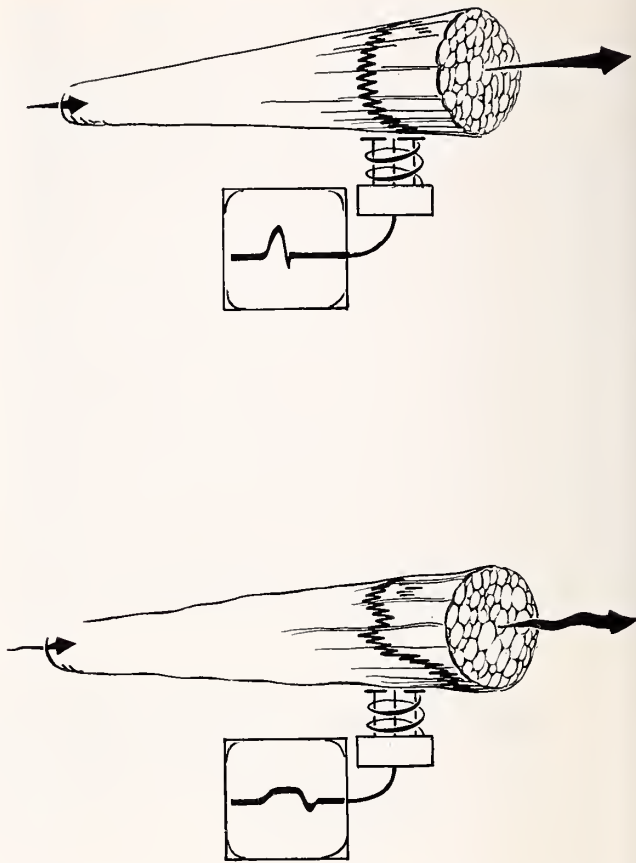


Figure 8. A. A normal nerve trunk conducts a relatively synchronous volley of impulses over the different-sized component fibers, as manifested by a fairly distinct nerve action potential. The duration of this potential, which is often one or two milliseconds, represents this nearly synchronous depolarization of the different-sized component fibers. B. The diseased nerve trunk B does not permit the passage of a synchronous volley of nerve fiber depolarizations. This increased spread of component fiber conduction velocity may either produce a lower potential amplitude and a longer potential duration, or abolish the recordable nerve action potential entirely.

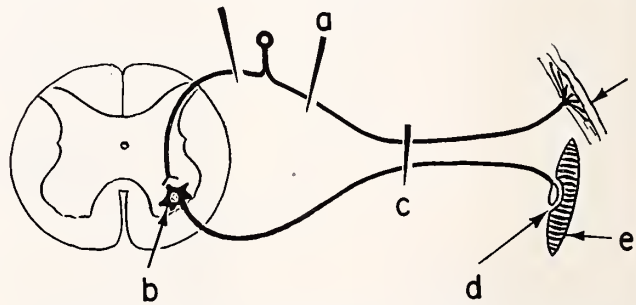


Figure 9. A summary of localization possibilities in terms of the discussed electrodiagnostic tests. (a) Post-ganglionic lesions will cause Wallerian degeneration and preclude the recording of sensory nerve action potentials, in some instances. (b) Anterior horn cell disease may show denervation changes on electromyography, and normal or nearly normal conduction velocities. (c) Peripheral neuritides may be detected with a slowing of conduction velocities, both motor and sensory. (d) Motor end-plate dysfunction in myasthenia gravis may be identified by means of repetitive nerve stimulation. (e) Primary muscular disease may be identified by EMG changes and by an absence of neuritic findings in the other tests.

vide clear localization of the disease process to the anterior horn cell or to the peripheral process of the motor unit. Nerve conduction studies may provide added help in reaching that decision. Only minimal reduction in conduction velocities have been reported in spinal cord disease.

Figure 9 summarizes some of the anatomic localizations that may be possible through combined technics of electromyography and nerve conduction studies.

SUMMARY

Two neurophysiologic technics with important clinical applications have been described. Some of the pathophysiologic concepts underlying the tests have been discussed. The possibility of localizing a neural lesion to one of four sites within the motor unit, or to one of two sites in the sensory arc, have been discussed. Examples of clinical applications have been presented.

Electromyography and the determination of the nature and velocity of conduction in motor and sensory nerves are supplementary, one to the other. Together, they may contribute substantially to diagnosis in puzzling neuromuscular disorders.

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The Neurologic Examination Illustrated

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MANY PHYSICIANS harbor an unwarranted feeling of inadequacy as regards performing and evaluating the neurologic examination, and thus neglect it almost entirely. Although an exhaustive examination requires considerable time, knowledge and experience, the problems of diagnosis in reference to many patients will be met by the simplified examination outlined below. Many details must perforce be omitted, but the authors feel that they can facilitate an improvement in the care of patients by presenting a neurologic examination that is practical for the busy practitioner to perform.

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By showing technics by which considerable knowledge of the neurologic status of a patient can be gathered quickly, they hope to avert the customary neglect of this matter. If neurologic deficits are found, more detailed inquiry will be necessary. In a given case, serious disorder may exist without exhibiting positive findings during this abbreviated examination or, for that matter, during more refined examinations. However, this circumstance is the exception rather than the rule.

The examination outlined below applies particularly to the ambulatory patient and has certain other limitations. If, however, no abnormalities are discovered, the examiner can safely state that there is no gross functional abnormality with respect to strength, coordination, stretch reflexes and sensation.

An important prerequisite to the effective use of the following technics is a knowledge of the "normal range of performance" at various ages. The acquisition of such standards requires interest, ordinary powers of observation and a certain amount of practice of the maneuvers to be described. When acquired, it will serve as another feature of that almost unconsciously applied standard of normality which constantly guides the physician.

THE EXAMINATION

Examination of the patient begins with a word of greeting, a hand clasp and the offer of a chair. As the patient recounts his symptoms and answers questions, a fairly accurate evaluation of his memory, intelligence, comprehension, reasoning power and speech can be made. These highest functions of the nervous system are also the ones having most variability within the limits of "normal." Especially to be watched for are "poor concentration," defective memory for recent events, loss of orientation, excessive circumstantiality, and poorly enunciated or halting speech. If speech is not fluent and if dysphasia is suspected, the patient should be asked to name simple objects, to add the values of coins and to read a sentence.

The more one can observe of the patient's physical performance, the more likely he is to discover neurologic abnormalities. One should not, however, overlook tremors, tics and various involuntary movements that are often best seen with the patient at rest; nor should he overlook paucity of movement, which is a common manifestation of Parkinson's disease. When the primary complaints seem not to suggest a disorder of the nervous system, it is advantageous and time-saving to ask the patient about the functioning of his sense organs and motor system as the examination proceeds. The examination described does not necessarily require that the patient lie down, and hence can be conveniently done either before or after the general examination.

It is convenient to begin with the patient walking, and to proceed from there as noted in the accompanying illustrations and legends. *Caution: Be certain that the patient is not likely to fall due to ataxia, age or other infirmity.* He may be given assistance in attaining his balance, and then be asked to perform the various tasks. Look for normal free-swinging movements of the arms as he walks, and for the free turning of the head which should precede that of the trunk. The loss of these associated movements suggests parkinsonism.

Agile hopping is one of the most demanding of activities and is the most economical to observe in collecting information (Figure 1). If the patient can hop well on either foot alone, springing up and down on his toes while maintaining his balance, he has little or no dysfunction of motor tracts, cerebellum, spinal cord, peripheral nerves, muscles or joints. Dysfunctions such as hitting the heel hard on the floor, losing balance, being unable to get off the floor, or dropping the foot at a spot more than three or four inches from the point of take-off will serve notice of some disorder.

Standing on one foot while shaking the other provides quick and simultaneous tests of balance, strength of pelvic girdle, certain aspects of strength of the legs, and the ability to perform rapid alternating movements. The tests of strength and coordination of the lower limbs conclude with squatting and rising on either leg alone, and walking on

heels and toes, provided, of course, that all performances are done well.

Posture of the arms is tested as shown, while one employs the Romberg test for balance (Figure 1 e). Early hemiparesis is easily picked up from a tendency to a flexion posture of the hand and arm, and a drooping of the affected arm. The strength and coordination of the arms and the ability to perform alternate movements of the hands can be tested rapidly while the patient is standing (Figure 2 a). Visual observation and palpation of muscles being tested for strength should be routine matters. If the patient successfully meets these tests of function of the extremities and of maintenance of posture essential to it, one can be reasonably sure that there is no gross disorder of the motor ("pyramidal" and "extrapyramidal") systems of the brain, midbrain, cerebellum and spinal cord. Similarly, the presence of a significant disorder of the peripheral nerves or muscles is unlikely. The patient then can be seated for the remainder of the examination.

Next, the scalp is palpated for deformity, and passive movements of the neck are performed to elicit evidence of stiffness. Carotid pulses should be gently sought. Strength of the neck in flexion and extension is tested against resistance.

Movement of the eyes, pupillary reflexes and vision deserve special attention. Central visual acuity can be tested by the standard Snellen charts, or by asking the patient to read small print with either eye. The normal position of eyes is noted, and a routine check is made for conjugate rotation and convergence, as illustrated in Figure 3. Nystagmus will be detected if present. One then administers confrontation tests for fields, testing the eyes separately. The examiner can add tremendously to the sensitivity of this gross test by moving his fingers on both sides of the patient's head simultaneously, since detection of movement in a defective field may be suppressed as attention is drawn to the normal side. Examination of the pupils and of their individual and consensual reactions to light is done as usual. Funduscopic examination, of course, is a routine and important part of the general examination.

Examination of cranial nerve function continues with testing for intactness of the sensory and motor components of the 5th cranial nerve (Figure 4).

The 7th cranial nerve is tested by sampling the patient's expressive action, as in grimacing, whistling, closing the eyes and furrowing the forehead. Hearing is tested with a watch or tuning fork (Figure 5). The 11th cranial nerve mediates contraction of the upper trapezius and the sternocleidomastoid muscles. Hence it is responsible for much of the strength of neck movements, in addition to the functions shown tested in Figure 5 c and d. Protrusion of the tongue and ability to flip the tongue rapidly are observed.

The tendon reflexes are elicited, as shown in Figure 6, and a comparison is made of responses

on the two sides in extremities placed symmetrical-ly. A light tap on a tendon that has been placed under gentle tension will bring out the stretch re-flex. Particular attention should be given to the Babinski sign. Its importance lies in its almost con-stant association with disease of the nervous sys-tem.

The sensory examination should be preceded by questions about symptoms of subjective disturb-

ance. The successful performance of the motor acts noted above serves to exclude all but subtle disorders of position and vibration sense. It is eco-nomical of time to ask the patient to outline areas of abnormal sensation. A brief sensory survey is best in a preliminary examination, and care should be taken to avoid suggesting deficits. Most sensory deficits are distributed in one of three ways: pe-ripherally in the extremities; dermatomal, as in

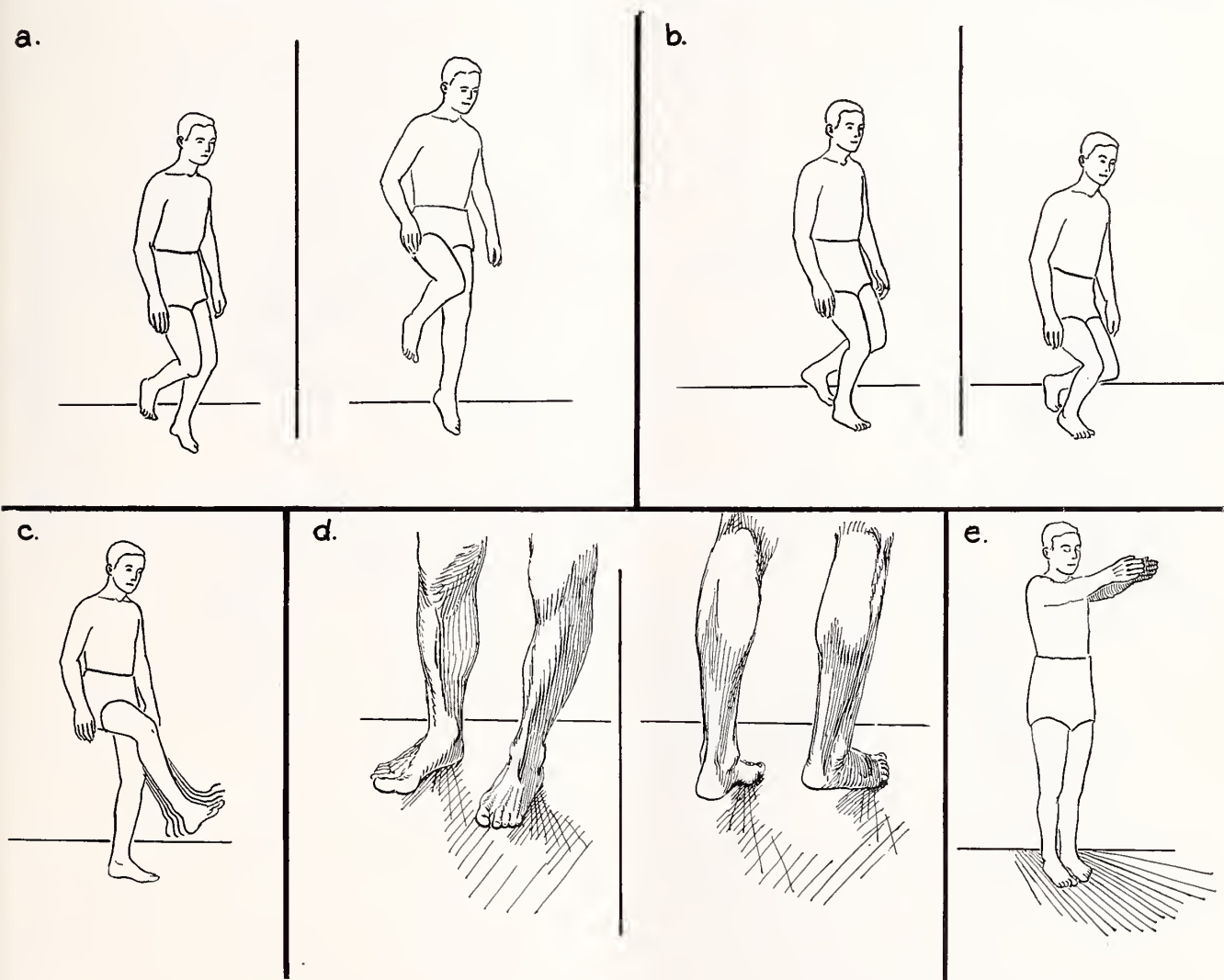


Figure 1

(a) Agility in hopping demands a rather high degree of muscular coordination, maintenance of balance, sense of position and good strength of muscles of the pelvic girdle, quadriceps and leg. Hopping usually is not well performed by the elderly and the arthritic. During this test, the examiner should support the older patient lightly by holding on to one of his arms or by placing his forearm under the patient's axilla. The estimation of balance is thus modified, but falls will be prevented.

(b) Selectively testing the strength of a quadriceps group is best done by having the patient squat and rise on one leg alone. An otherwise easily overlooked weakness of this muscle group is quickly apparent as a deficiency in controlling the downward movement, or in rising. Hopping may also reveal this. A need for aid in maintaining balance is often indicated.

(c) Ability to stand on one leg alone again tests balance,

strength and coordination. Shaking the other leg at the same time quickly tests ability to perform rapid alternating move-ments. This latter ability (diadochokinesia) is impaired in spasticity, cerebellar disorders and sometimes in parkinson-ism.

(d) Foot drop is easily overlooked unless the patient is asked to walk on his heels. The distal or forward portion of the foot should clear the floor, and the toes—especially the great toe—should be strongly dorsiflexed. One should inspect the muscles for atrophy while observing this ma-neuver. The patient is then asked to walk on his toes, as il-lustrated. This maneuver tests the strength of his calf muscles.

(e) The standard Romberg test is done with the patient standing erect and with his feet approximated. Balance is checked first with the patient's eyes open, and then with them closed. It is time-saving to have the patient hold his arms outstretched as shown. In hemiparesis, the affected arm drifts downward and takes a flexion posture, as does the hand.

spinal-cord or root compression; or one-sided, hemihypesthesia (Figure 7). Hence, one should compare sensation in contrasting areas.

The common pin is the most valuable tool in sensory testing. A sensation of sharpness should be elicited by a light application of it to an unaffected area. (The base of the neck anteriorly is seldom affected in disease.) Then the contrasting areas may be compared, and sites of change of sensitivity should be noted (Figure 8 a). Sensation of touch can be tested by a light application of fingers or by the use of cotton. The most important areas to test are the hands, feet and face.

The methods of more detailed testing of sensory

modalities are shown in Figure 8 and are explained in the legends. Impairment of two-point discrimination is one of the early clinical signs in peripheral neuropathies and posterior column disease (e.g., in pernicious anemia). Loss of stereognosis, when not obviously due to peripheral neuropathy, is a valuable sign of brain disease.

CONCLUSION

The purpose of this presentation has been to describe and illustrate a series of maneuvers which can be performed quickly and which will rapidly reveal the presence of disorder of the nervous system or give reasonable assurance of

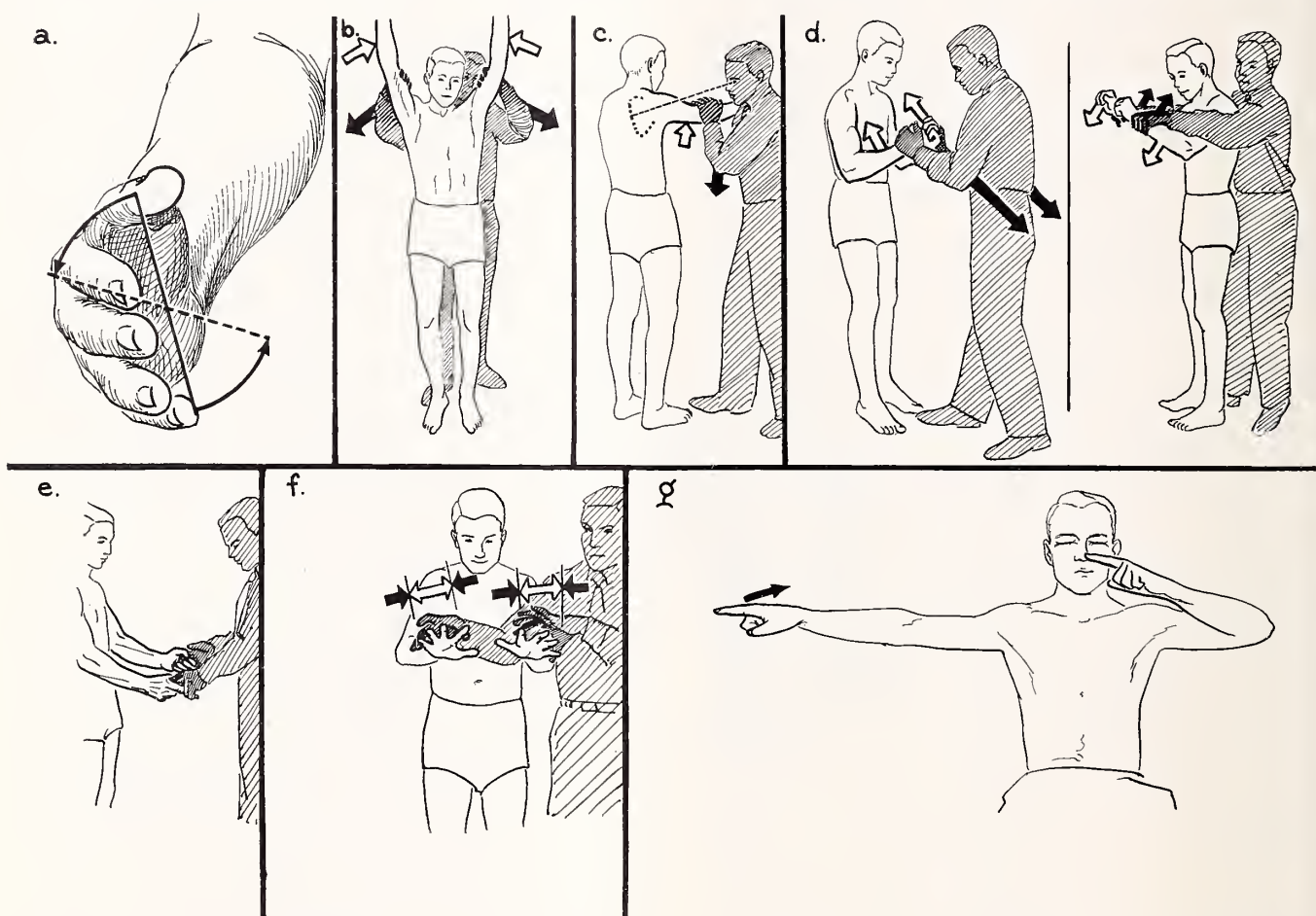


Figure 2

(a) When the Romberg test and observation of arm posture noted in Figure 1 have been completed, the patient may be asked to shake his hands rapidly or engage rapid pronation and supination to test his ability to do rapid alternate movements—an ability commonly diminished in disorders of brain and spinal cord.

(b) Ability to hold the arms abducted is impaired early in hemiparesis or in shoulder-girdle weakness. The test is shown.

(c) When the patient's arms are outstretched forward, the physician presses an arm down against resistance. If present, scapular winging will thus become apparent.

(d) Strength of biceps plus brachioradialis, and triceps, can be tested against the patient's resistance as shown.

(e) Testing strength of grips. The views are self-explanatory. Remember, gripping is largely done by the musculature of the forearm. The intrinsic muscles of the hand, especially the interossei, are tested by finger abduction as shown (f). More refined and individualized testing should be done if weakness is detected. Early hemiparesis and peripheral neuropathy produce weakness in these areas.

(f) The patient performs the finger-to-nose test with his eyes closed, and alternately with one extremity and then the other. In cerebellar disorders this movement is not done smoothly, and the finger tends to deviate when it approaches the nose. The movement is poorly "braked," moreover, and the finger may strike the face. When position sense is disturbed, the movement may be done in a fairly well-coordinated way, but the target is missed.

normal function. In the presence of demonstrated disorder, more refined examinations should be carried out as indicated. A number of helpful text-books are available to provide more detailed information regarding the neurologic examination and the implications of abnormal findings.

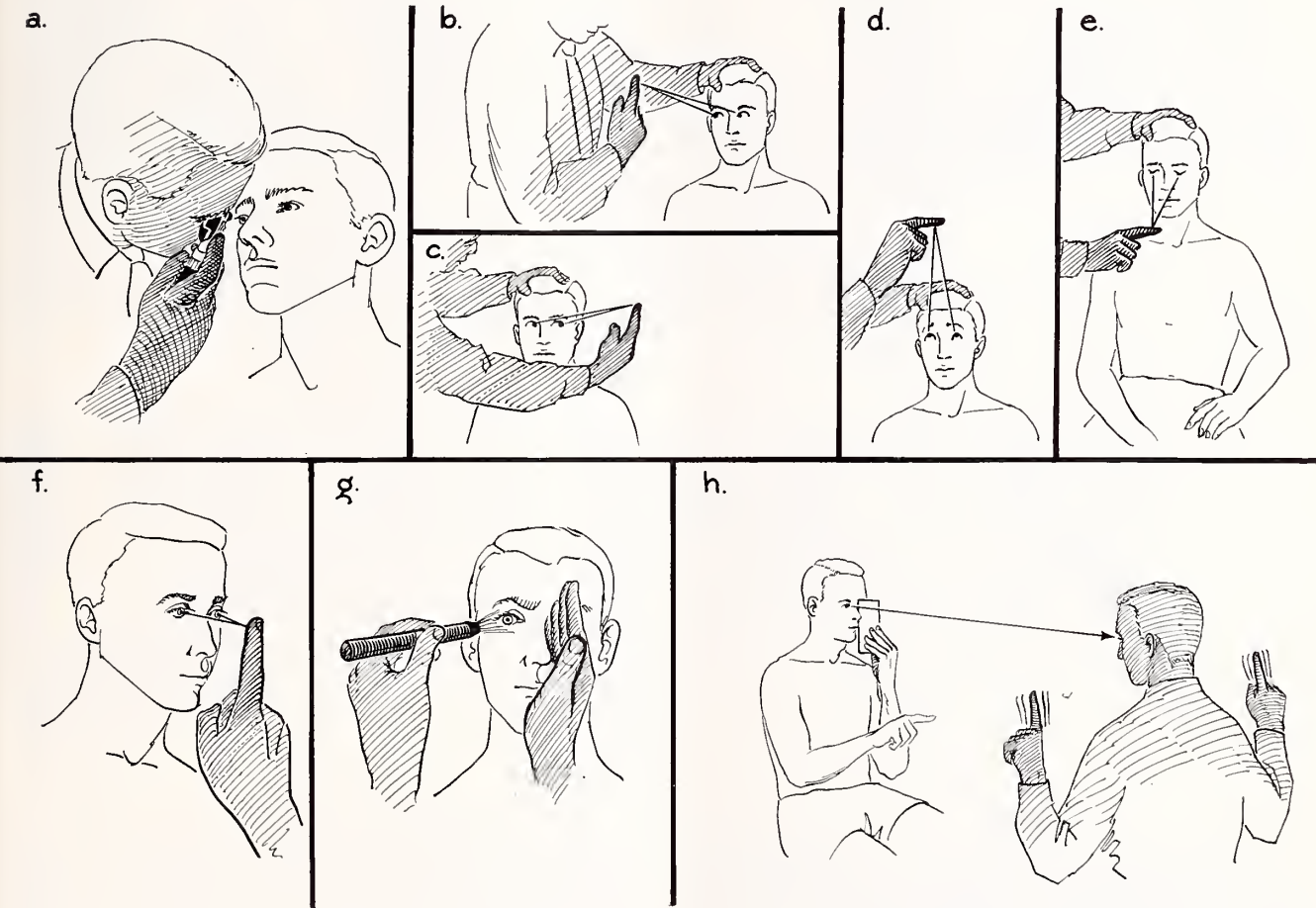


Figure 3

(a) Any abnormality of the fundus may be of neurologic interest. One looks particularly for papilledema, optic atrophy and alterations in the vessels.

(b, c, d, e) After observing for normal position of the eyes in forward gaze, check rotations of the eyes as shown. Ask whether the patient experiences diplopia in any position. Nystagmus, if present, should appear during these maneuvers. Minor jerky movements of the eyes at extremes of lateral gaze can usually be ignored.

(f) Many patients converge poorly on a near object, but most will converge to some degree. In the normal person,

pupillary constriction and accommodation occur reflexively on this maneuver.

(g) Observe for equality and roundness of pupils, and for individual reaction to light. Then check to see whether the contralateral pupil reacts when only one eye is exposed to light (consensual reaction).

(h) Gross defects in the visual fields may be found by finger movement in the quadrants, with the patient looking at the examiner's face. The eyes should be tested separately. A more sensitive variation of this test involves moving fingers on both sides simultaneously. The patient tends to neglect one finger in the presence of a visual field cut or suppression on that side.

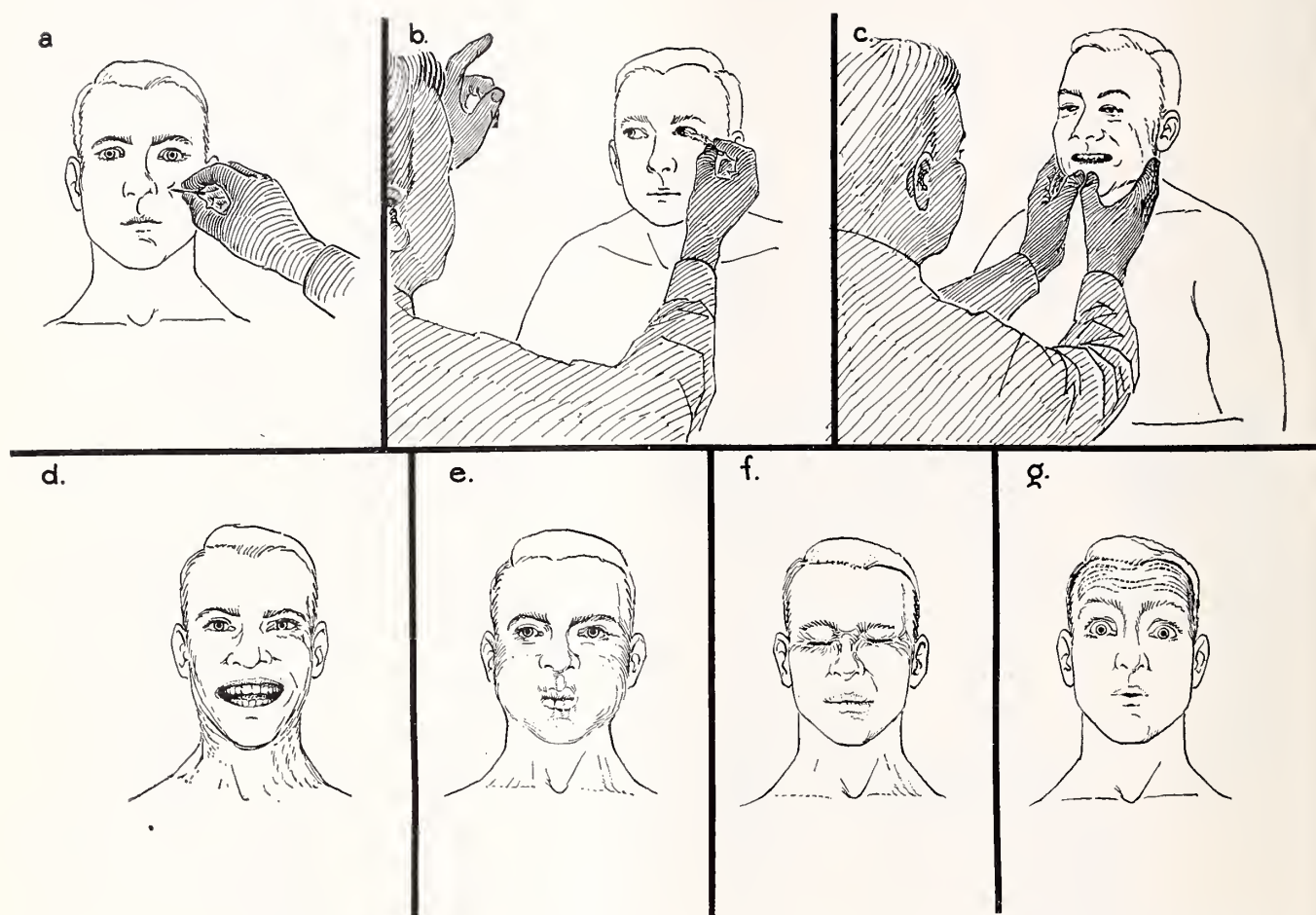


Figure 4

(a) The 5th cranial or trigeminal nerve is tested for both sensory and motor functions. Using pin and cotton, the physician elicits sensations of sharpness and touch, and compares the two sides in forehead, cheek and chin, corresponding to the three major divisions.

(b) A light touch of cotton to the cornea is a more objective test of sensory loss, eliciting the blink reflex. Rapidity of withdrawal and lid closure may be lessened on the side of diminished pain sensation in the first or ophthalmic division.

(c) The 5th nerve innervates the muscles of mastication. The physician should ask the patient to bite his teeth together firmly while he is palpating the masseter muscles and attempting to resist the patient's movement.

(d) The 7th cranial nerve innervates the muscles of the face. By showing the teeth and contracting the platysma, the patient allows the doctor to estimate the strength and

symmetry of his lower facial muscles. It is expeditious for the doctor to demonstrate what he wishes the patient to do. Some normal subjects have limited ability to exercise selectivity in the use of the facial muscles.

(e) Puffing out the cheeks is a good test for facial palsy, since air tends to escape on the paretic side.

(f) Closing eyes tight is another good test of facial strength in disorders of the nerve (lower motor neuron) or brain (upper motor neuron). The physician can supplement the test by trying to pull the patient's lids apart gently against resistance.

(g) Eliciting contraction of the frontalis is important. Most patients do this quickly on being asked to look upward strongly. Weakness of contraction of this muscle on the side of lower facial weakness is almost pathognomonic of a facial nerve lesion (e.g. Bell's palsy). Sparing of the frontalis in the presence of unilateral facial weakness usually means that the weakness of the lower face is due to a lesion of the brain.

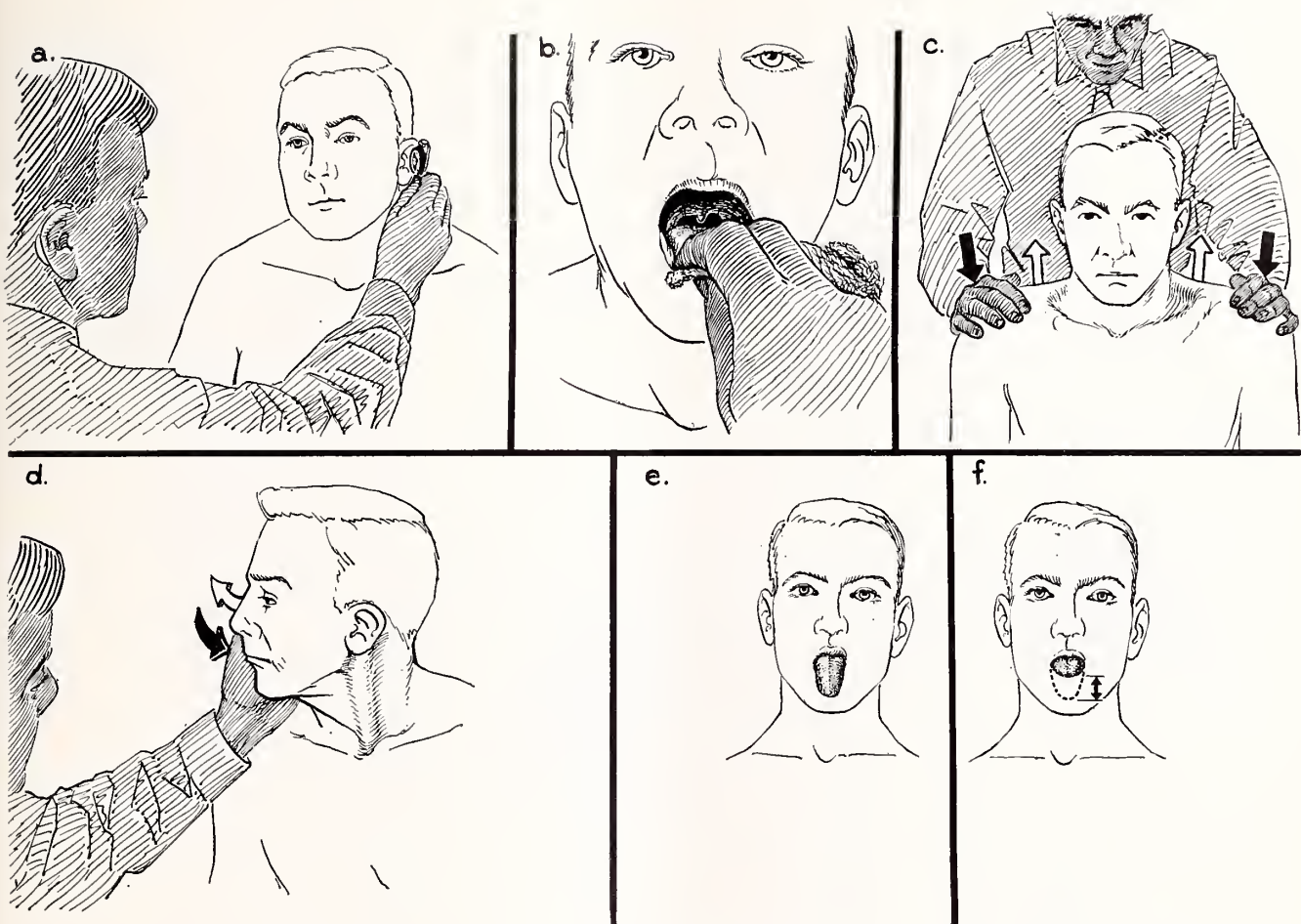


Figure 5

(a) Hearing can be tested grossly by noting the patient's ability to hear a watch tick or the sound of a tuning fork. Acuities of the two ears should be compared. The vestibular portion of the 8th cranial nerve is not tested in the routine examination.

(b) The palate is elevated on phonation and in the gag reflex. Movement on the two sides should be equal. Minor asymmetries are common, but paralysis of one side is indicated by a definite failure of the arch on this side to be elevated. A failure of the palate to move, even in gagging, associated with nasal speech, indicates bilateral paralysis. Palatal movements have their centers in the medulla, and are mediated via the vagus or 10th cranial nerve. Hoarseness should lead the physician to suspect 10th-nerve paralysis as

well. Paralysis of a vocal cord may be diagnosed only by laryngoscopy.

(c, d) The function of the 11th cranial (spinal accessory) nerve is tested by checking the strength of the trapezius and sternocleidomastoid muscles. Observation of bulk and firmness during contraction is an important part of this and all other muscle testing.

(e, f) The hypoglossal or 12th cranial nerve is tested by observing the strength and symmetry of protrusion of the tongue. The tongue will deviate to the side of weakness. Neurogenic atrophy is manifested by longitudinal furrowing. Rapid flipping of the tongue (f) is requested in order to test the patient's ability to do rapid alternate movements. The maneuver usually must be demonstrated to the patient. This ability is diminished in some instances of brain disease (pseudobulbar palsy).

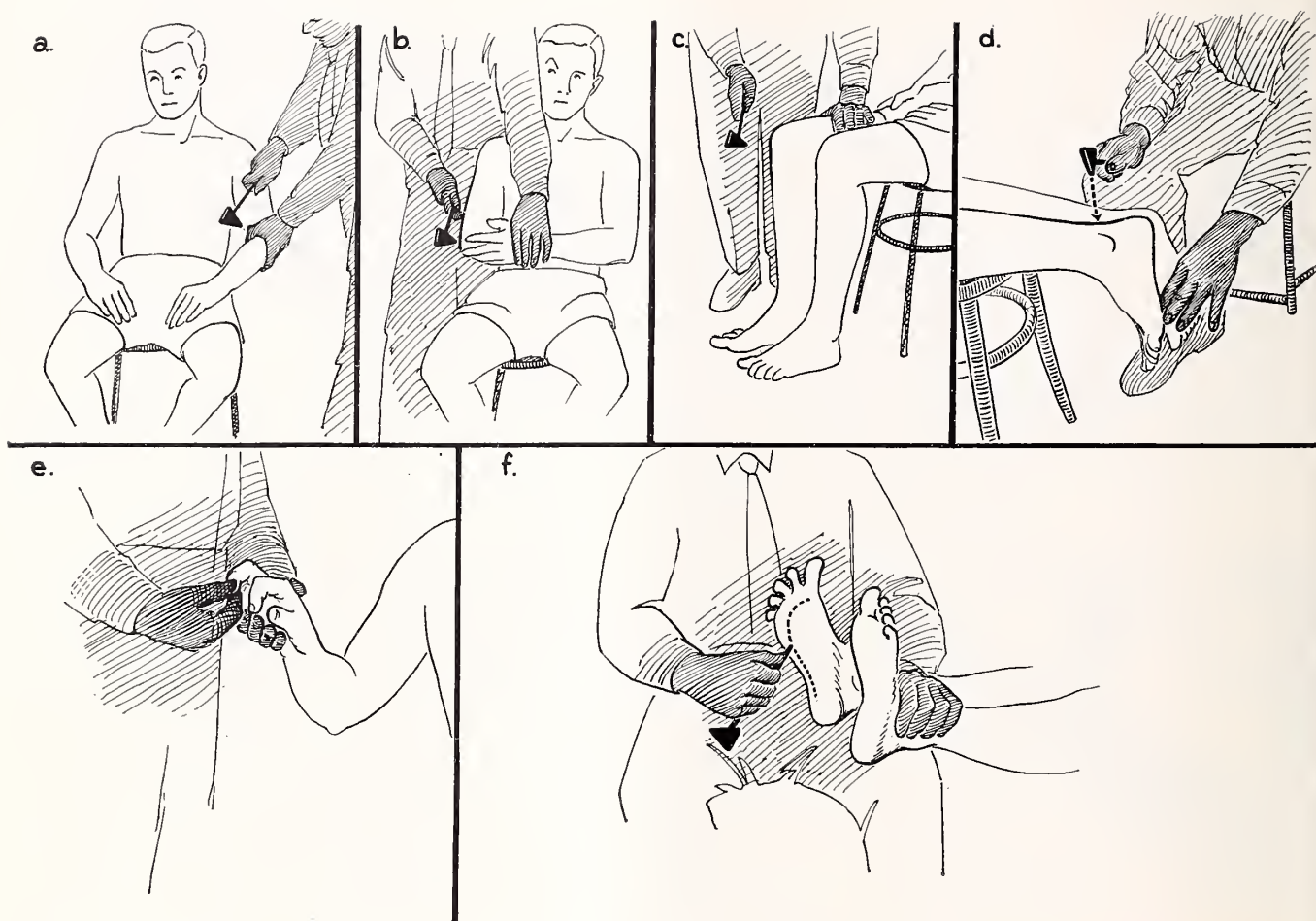


Figure 6

(a) The stretch reflexes must be obtained from an extremity so positioned as to place the muscle to be tested under moderate tension. The position shown is usually satisfactory for the biceps reflex. The physician must place his thumb on the biceps tendon and strike the thumb. The reflex response is both felt and seen. He should use gentle taps of equal strength on the two sides, with the patient's extremities symmetrically placed.

(b) Testing the triceps stretch reflex. The same principles apply. Other positions, including arms akimbo, may be used.

(c) The patellar tendon reflex is often more easily tested when the patient's feet are flat on the floor than when his legs are dangling from the examining table. The quadriceps group is easily and quickly relaxed in this position. The doctor should feel and watch the response.

(d) The Achilles tendon reflex is easily and quickly tested

in this position, with the patient kneeling. The doctor should tap the tendon gently.

(e) The Hoffmann sign is positive in spasticity and occasionally in tense normal subjects. The physician should have the patient's hand relaxed, and he should flip or snap the end of the subject's middle finger between his thumb and forefinger. Flexion of the thumb and other fingers constitutes a positive sign.

(f) The Babinski sign is the single most important reflex to be elicited. The test may produce artifacts because of ticklishness and sensitivity of the sole. The metal end of the ordinary reflex hammer is an appropriate tool to use, but at times a sharper instrument is required such as a key or a broken tongue-blade. The bluntest point possible should be used, and the foot should be stroked from the heel to the base of toes. The sign is manifested by a dorsiflexion of the great toe and a fanning of other toes, as shown.

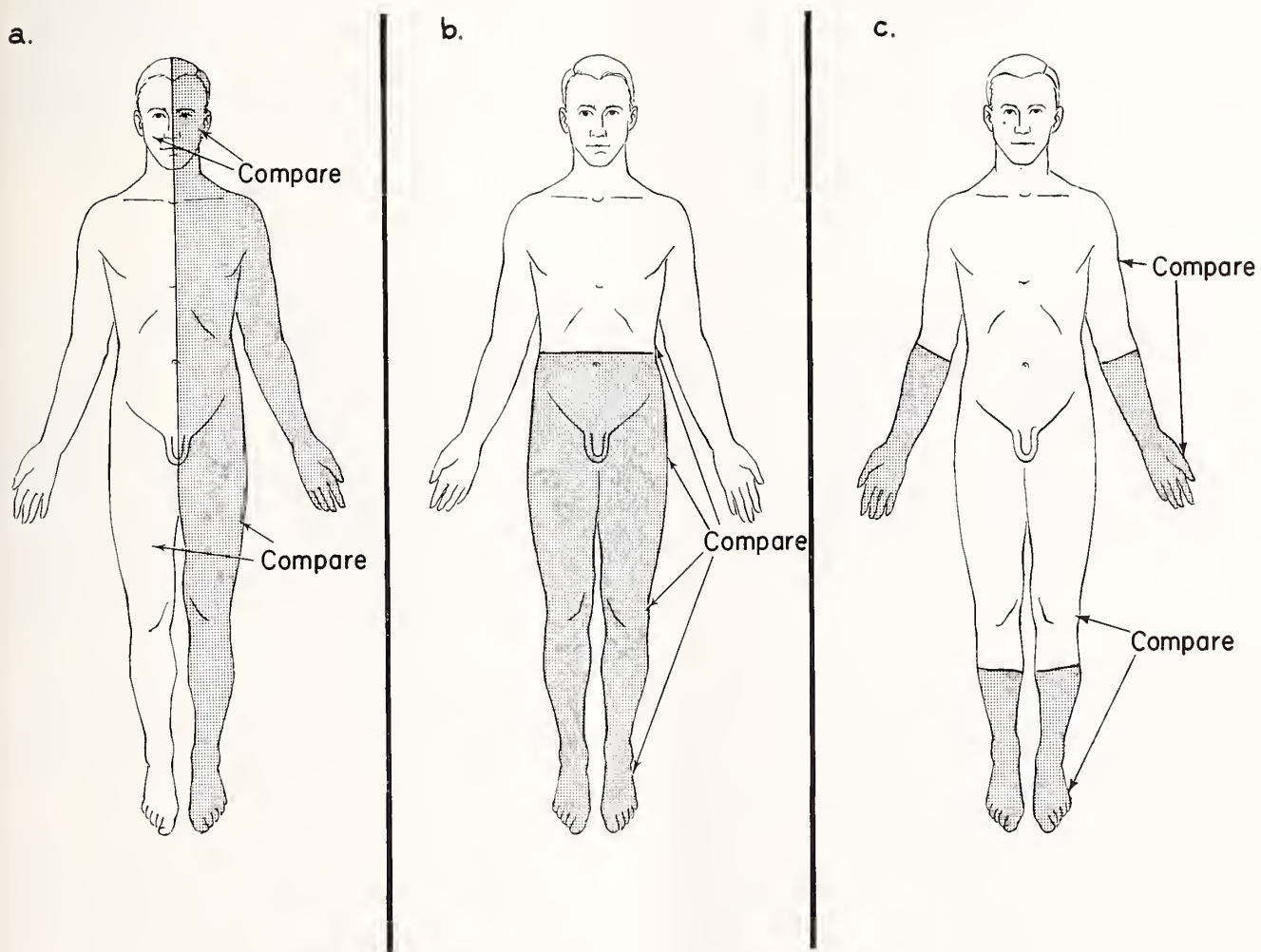


Figure 7

(a) This drawing illustrates the hemianesthesia or uni-lateral sensory deficit seen in brain lesions.

(b) The distribution of sensory loss here is typical of spinal cord lesions.

(c) Peripheral sensory loss typical of peripheral neuritis.

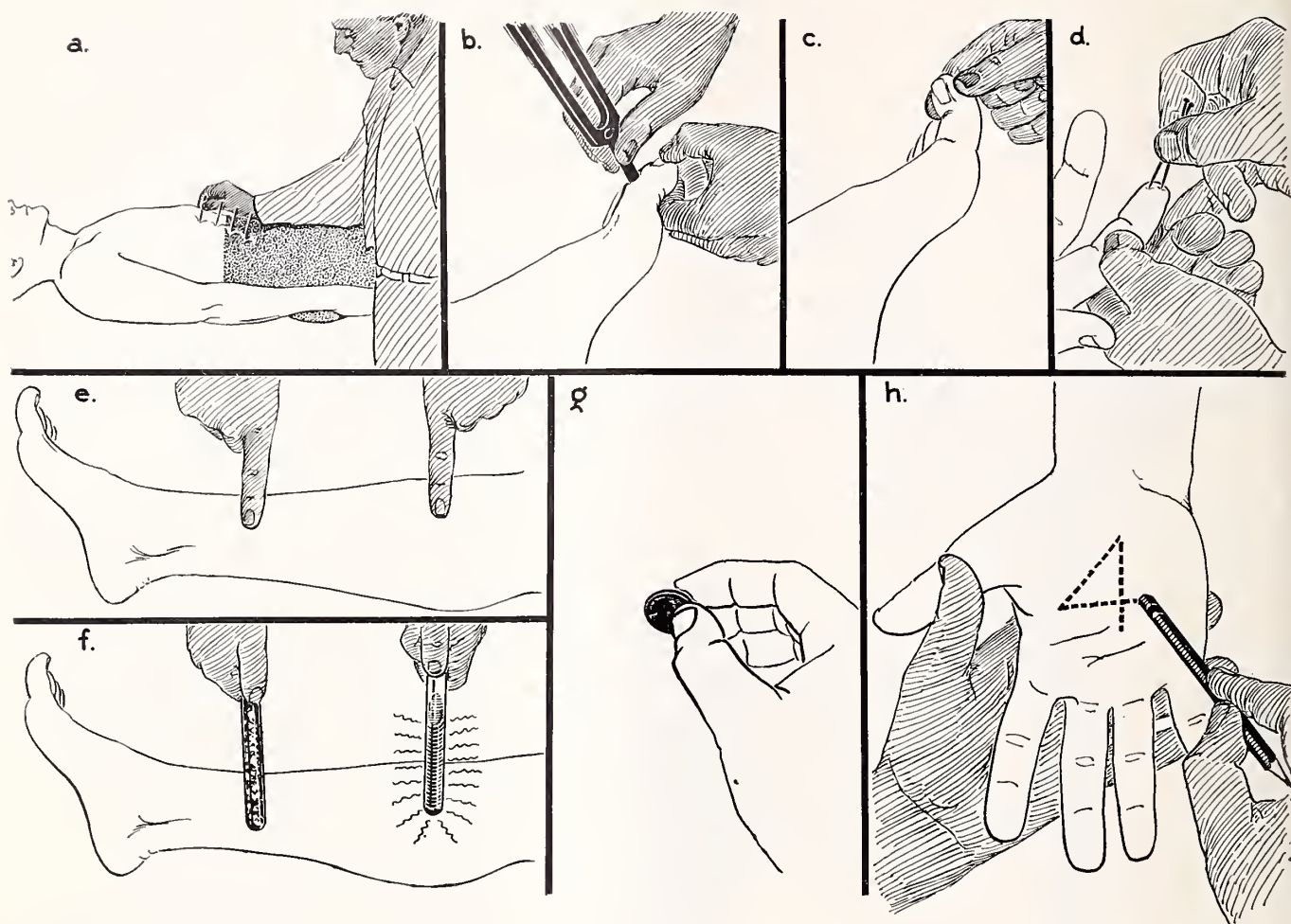


Figure 8

(a) When attempting to outline a "level" of demarcation between normal and denervated zones, it is well for the physician to begin stimulation of the skin in the abnormal region, and then to approach the normal with consistently applied stimuli. The patient will identify the transition from abnormal to normal more easily than from normal to abnormal. Stimulate an unequivocally normal zone, from time to time, to aid the patient's memory and orientation. The demarcation of zones of sensory deficit is usually first done by testing for pain by pinprick. Then a light touch of cotton is used, and then temperature discrimination is tested by means of tubes of hot and cold water.

(b) Vibratory sense is easily tested by the tuning fork as shown. It is probably best to use a large fork with a frequency of 128 vibrations per second. Place it firmly on skin which is closely applied to bone. Some degree of quantitation is possible if the patient is asked to report the moment he no longer detects the "buzz." The ability to sense the vibration is commonly lost in the toes of the elderly. Position and vibratory senses are conducted by larger fibers of the peripheral nerve and by the posterior columns of the spinal cord. The former is tested as shown (c). Hold the great toe or a finger lightly by the sides to avoid giving adventitious clues as to direction of change of position. Movements of approximately 10° should be detected if they are done quickly, and the direction of movement should be correctly identified.

(d, e) The patient's ability to detect the presence of both of two simultaneously and closely applied stimuli (two-point discrimination) is evaluated as shown. The physician holds two pins approximately 4 mm. apart in testing the finger pads, and uses his fingers, held 8 cm. apart, in testing the

shin. Testing for loss of this ability is often useful in discovering deficits that cannot easily be detected by other means. This is especially true of early sensory loss due to neuritis or posterior-column disease, and is particularly valuable in examining the fingers.

(f) The ability to discriminate temperature differences is closely associated with the ability to sense pain. Testing for this modality is useful when loss of pain sense is equivocal, and it has a special application in the analysis of spinal-cord (spinothalamic) lesions. Test tubes filled with hot and cold water from the lavatory faucets are commonly used, but ice may be added to the cold tube. The examiner applies one or the other tube in irregular sequence to determine the patient's ability to identify hot or cold. A level of sensory loss due to disorder of the spinal cord can be found by slowly working upward from the legs until an area is encountered where the patient's responses are accurate.

(g) The ability to identify small common objects in the fingers is a measure of stereognosis. Loss of stereognosis can be diagnosed only if cutaneous and proprioceptive sensations are intact. It is impaired in disease of the central nervous system (parietal lobes), where conduction of these modalities or their interpretation is disturbed. The physician could give the patient successively such objects as coins, paper clips, pencils and keys, making sure that he cannot see the objects. He should compare this ability in the patient's two hands. The normal patient has little difficulty with this test.

(h) Graphesthesia is the ability to identify numbers or letters written on the skin. The average patient identifies numbers rather easily. Loss of this ability has about the same significance as does loss of stereognosis. The test is useful when the hand is paralyzed and when it cannot manipulate small objects.

Umbilical Cord Prolapse and Presentation

A Study of 62 Consecutive Cases

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PROLAPSE OF THE umbilical cord occurs once in approximately 200 deliveries. Prompt recognition and appropriate management can reduce its influence on infant morbidity and mortality. However, this situation should not result in panic and in any subsequent injudicious action which might cause unreasonable danger to mother and infant, and neither should there be the other extreme of pessimistic complacency. A successful regimen of management should stem from knowledge of the predisposing factors, from alertness for detection of prolapse or presentation, and from a rational program for both immediate and definitive treatment of this obstetrical catastrophe.

Umbilical cord *presentation* is the presence of the cord below the presenting fetal part while the membranes are still intact; *prolapse* is presence of the cord below or alongside the presenting part after the rupture of membranes.

MATERIALS

Two previous articles from the Department of Obstetrics and Gynecology at the S.U.I. College of Medicine have reported upon cases of cord prolapse from 1926 through 1953.^{1,2} The present report covers the subsequent nine-year period through 1962.

There were 14,457 deliveries of infants weighing 1,000 Gm. or more at University Hospitals, Iowa City, from January 1, 1954, through December 31, 1962. During that period, there were 58 instances of cord prolapse and 4 instances of cord presentation, or a total of 62. The incidence of 0.43 per cent is identical to that reported by Cushner¹⁰ after a review of the literature, in which 3,379 prolapses occurred in 788,825 deliveries. The inclusion of cord presentations in this study is thought to be valid, since they represent early detection of a condition which most probably would result in prolapse following rupture of the membranes. When diagnosed, three of the patients were in active labor, and the fourth was at term but not in labor.

ETIOLOGY

Several entities may be considered as factors contributing towards cord presentation or prolapse.

A. MALADAPTATION

1. *Breech and abnormal presentations.* Table 1 indicates the significant role played by breech (particularly complete and footling), transverse and compound presentations. Although prolapse occurred in equal numbers of vertex and breech presentations, there was a preponderance of the former as a percentage of all deliveries. In this study, the incidence of cord prolapse was greatest (20.0 per cent) with compound, next with breech, then with transverse, and least (0.21 per cent) with vertex presentations.

TABLE 1

CORD PROLAPSE AS RELATED TO FETAL PRESENTATION

Presentation	Cases	Per Cent of Total	Incidence of Cord Prolapse in All Deliveries 1954-62
Vertex	28	45.2%	0.21 %
Breech	28	45.2%	4.4 %
Footling (18)			
Complete (7)			
Frank (3)			
Compound	4	6.4%	20.0 %
Transverse	2	3.2%	2.4 %

2. *Low Lying Placenta.* Only one such case occurred in this study, but such abnormal placental implantation has been said to interfere with filling of the pelvic inlet.³

3. *Contracted Pelvis.* In geographic areas of this country that have large populations of non-whites or Puerto Ricans, pelvic-inlet contraction can be a significant etiologic factor. The incidence of abnormal pelves in Iowa is low, however, and has been reported as being less than 4 per cent of all pregnant women.⁴

Two women, however, had abnormality of the pelvic inlet. In one, a shortened true conjugate diameter was secondary to L₅-S₁ spondylolisthesis; the vertex was floating, and cord presentation was discovered during labor. A primigravida began labor with a high complete breech presentation, and

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x-ray pelvimetry revealed a narrow transverse measurement of the inlet. Cord prolapse was diagnosed after spontaneous rupture of membranes.

4. *Pelvic tumors.* Masses that discourage fixation of the presenting part within the inlet also predispose to cord prolapse. One cord prolapse occurred after spontaneous rupture of membranes in early labor, with a floating vertex presentation. At cesarean section, an 8 x 13 cm. ovarian teratoma was present in the cul-de-sac.

5. *Prematurity.* The small size of premature infants, as well as increased frequency of abnormal presentation and floating presenting part in such cases, contributes to a high susceptibility for prolapse. Eleven infants in this series weighed between 1,000 and 2,499 Gm. (17.7 per cent). This number is twice the usual prematurity rate of approximately 8.5 per cent for this Hospital.

6. *Polyhydramnios.* Two pregnancies were associated with excessive amounts of amniotic fluid which tended to prevent descent of the vertex into the inlet. One prolapse occurred at the time of amniotomy for induction of labor, and the other followed premature spontaneous rupture of membranes.

B. MULTIPLE GESTATION

Prolapse is enhanced by the increased incidence of polyhydramnios, breech presentation and prematurity. It may be encountered with either the first or second infant, but usually it is of less danger in the latter, since prompt delivery ordinarily can be accomplished through the completely dilated cervix.

Two sets of twins were in this series (3.2 per cent)—nearly twice the incidence of 1.7 per cent for all twin deliveries in the nine years studied.

C. AMNIOTOMY

Elective induction of labor is performed relatively frequently at this Hospital. Previous essayists have reported upon its inherent problems, but an increased incidence of cord prolapse has not been observed.^{5, 6} In fact, Keettel and co-workers⁵ reported identical incidences of four prolapses in 1,000 women who had been induced, and four prolapses in 1,000 patients who had entered labor spontaneously.

In the present study, however, there were 19 cord prolapses following amniotomy (32.8 per cent). Five of the amniotomies were performed for induction, and 14 were done during labor to improve uterine contractions.

D. PARITY

Perhaps because of the frequency of a high presenting part and a greater incidence of abnormal presentation at term than in primigravidas, a higher rate of cord prolapse is found in multigravidas.^{2, 7} Fifty-four (87.1 per cent) patients were

multigravidas, compared to the incidence of 64.6 per cent for all deliveries during the same period.

E. PREVIOUS CESAREAN SECTION

Kurtz and Munro⁸ state that distortion of the lower uterine segment subsequent to scarring from cesarean section may contribute to prolapse. In this series, two women (3.2 per cent) had had previous cesarean sections. This is not unlike the 3.6 per cent incidence in all obstetrical patients.

F. LONG CORD

Mengert and Longwell found a six times greater incidence of prolapse among patients with cords 75 or more centimeters long. Five cords in this series are reported as having exceeded that length (one was 90 cm.), but these data are not sufficiently accurate to warrant conclusions.

Thus it can be seen that there is a common denominator associated with cord prolapse—an incompletely filled pelvic inlet at the time of rupture of the membranes.

DIAGNOSIS

It is generally agreed that prompt recognition of prolapse is essential for the reduction of an associated perinatal mortality which has been quoted recently as between 13 and 42 per cent.^{7, 8, 9, 10} Knowledge of the predisposing factors just discussed should alert the obstetrician to perform aseptic vaginal examinations in appropriate patients following rupture of membranes.

Alertness to the possibility of cord presentation should prompt the obstetrician to perform a vaginal examination when the presenting part remains elevated during labor when the membranes are intact or when fetal bradycardia suggests possible cord compression.

On the obstetrical service at University Hospitals, vaginal examination is performed in the delivery room under aseptic conditions immediately after spontaneous rupture of membranes in patients with breech, transverse or floating vertex presentation, polyhydramnios, premature infant (of at least 36 weeks' gestation), multiple pregnancy or evidence of fetal distress.

In the occasional patient with near-complete cervical dilatation and an elevated presenting part, amniotomy may be performed in the delivery room after preparations have been made for immediate cesarean section. Seven cases were managed in this manner. It may be conjectured that if spontaneous rupture of membranes and prolapse had occurred in the labor bed, valuable time might have been lost before definitive action could be taken.

Fetal bradycardia is not a consistent finding with prolapse, but when present it probably indicates a significant degree of cord compression against the presenting part. It was present in 29 infants (46.7

per cent). Thus this is at least one valuable piece of information that is to be gained from monitoring the fetal heart rate during labor.

PERINATAL STATISTICS

From the 62 deliveries, there were seven infant deaths (making the uncorrected mortality rate 11.4 per cent). However, three of these infants were born alive and then succumbed from associated congenital malformations: (1) Duodenal atresia was diagnosed in a 1,635 Gm. infant on the second day of life. Surgery was unsuccessful, and death from sepsis occurred on the twelfth day. (2) A 1,985 Gm. infant lived two hours. Multiple malformations (including renal agenesis) were found at autopsy. (3) A 3,500 Gm. infant lived 48 hours, and autopsy revealed cerebral cortical agenesis and toxoplasmosis. The other four deaths were attributable solely to cord prolapse. Thus, the corrected death rate was 6.4 per cent.

The smallness of the number of cases permits a brief résumé.

(1) M. A., a 21-year-old, G4-P3, had a high vertex during labor, and was prepared for amniotomy and delivery when her cervical dilation was thought to be complete. The cord prolapsed and became pulseless, and the fetal heart tones disappeared before the delivery of a stillborn 3,155 Gm. infant could be accomplished.

(2) H. B., a 26-year-old, G5-P4, had been an antepartum inpatient. However, when labor began she did not inform hospital personnel until after the membranes had ruptured and the pulseless cord was through the introitus. Low-forceps delivery of a 3,125 Gm. stillborn infant was performed 15 minutes later.

(3) E. G., a 23-year-old, G5-P3, with a footling breech, had spontaneous rupture of membranes during labor. There was an exceptional delay of 40 minutes in performance of vaginal examination. The cervix was dilated 8 cm., and the prolapsed cord was pulsating slowly. During preparation for cesarean section the fetal heart tones disappeared, and 25 minutes after diagnosis of prolapse a 3,450 Gm. stillborn was delivered as an assisted breech.

(4) M. W., a 35-year-old, G9-P7, had spontaneous rupture of membranes during labor. Five minutes later, vaginal examination revealed the vertex above the ischial spines, the cervical dilation was 8 cm., and the cord was believed pulseless. Heart tones could not be heard, and preparations for immediate delivery were discontinued. Twenty minutes later, however, there was spontaneous delivery of a 2,980 Gm. severely-obtunded infant. The baby lived only 18 hours.

Other workers have correlated perinatal statistics with the following factors. The relatively few perinatal deaths in this series do not permit satisfactory conclusions, but opinions can be offered on the basis of these data.

A. *Time elapsed from prolapse until delivery.* It

is reasonable to assume that delay in detection of prolapse, as well as delay between diagnosis and delivery, increases perinatal mortality. Statistics from other series^{3, 7} clearly indicate the validity of this concept. The lower mortality rate in this series may be attributable to a reduction of these intervals. Promptness of delivery, however, must not be achieved at the sacrifice of relative safety for mother and infant.

B. *Station of the presenting part.* There is no unanimity of opinion regarding the role of this feature in fetal survival. Slate and Randall² found a higher fetal death rate when the presenting part was not engaged, but Price and others⁷ have found a better fetal salvage if the presenting part was high. In 46 cases in this series, the presenting part was above the ischial spines when prolapse was diagnosed and this group included all four fetal deaths. The small number of deaths, however, precludes valid conclusions.

A higher presenting part should offer a better fetal survival because of less cord compression and more willingness on the part of the obstetrician to perform a cesarean section rather than to await vaginal delivery.

C. *Presentation.* This is a nearly impossible factor to assess accurately because of the recent increase in operative rates. Particularly, the salvage of infants with transverse or compound presentations has been greatly improved by more liberal use of cesarean section.

In this study, three of the infants who died were vertex presentations, and the fourth was a footling breech. The six transverse or compound presentations were successfully delivered, either by cesarean section (four) or by internal version and extraction (two).

D. *Fetal Size.* Prematurity is doubly hazardous—not only as an etiologic factor in prolapse, but also as a threat to survival in the neonatal period. Of our 11 prematures, three were delivered by breech extraction, three by assisted breech extraction, and five by cesarean section; all survived delivery and the neonatal period except for two who had serious congenital malformations. Much credit for this survival rate must be attributed to neonatal care as well as to antepartum management and delivery technic.

E. *Parity.* Mengert and Longwell¹ found twice as high a rate of fetal mortality among primigravidas as among multigravidas, but Slate and Randall² noted, instead, that primigravidas have equal, if not better, opportunity for live infants. The primigravidas (12.9 per cent) in the present series had no fetal deaths, and the multigravidas lost 4 infants.

F. *Cervical Dilatation.* Unless there is complete cervical dilatation, fetal survival is better from patients with less dilatation at the time prolapse is diagnosed.^{7, 11} With more dilatation, the obstetrician might anticipate early vaginal delivery, though

it is not always forthcoming; with lesser dilatation, prompt cesarean section is the logical choice. Nine patients were dilated less than 4 cm., 19 were dilated 4-6 cm., and all infants survived; 21 were dilated 7-9 cm., and the four deaths occurred; 13 women were completely dilated at time of prolapse, and all infants survived. See Table 2.

TABLE 2
RELATIONSHIP OF INFANT DEATHS TO CERVICAL
DILATATION AT DIAGNOSIS OF PROLAPSE

Cervical Dilatation	Cases	Per Cent	Infant Deaths
2 cm.	2	3%	0
3	8	13	0
4	11	18	0
5	3	5	0
6	5	8	0
7	7	11	1
8	7	11	2
9	7	11	1
10	13	21	0

MANAGEMENT

After diagnosis of cord prolapse or presentation has been made, the course of action should have but one objective (unless there is unequivocal evidence of fetal intrauterine death)—delivery of the infant in the most expeditious manner, but without undue risk of mortality or morbidity to the mother and infant.

Cord Presentation. The threat to the fetus is relatively slight as long as the membranes are intact. Amniotomy must never be performed without a careful examination to exclude cord presentation. During labor, amniotomy should be done between contractions. Doing it through a tense and bulging forebag with a contraction seems to invite prolapse.

If the patient with a cord presentation is at term but not yet in labor, cesarean section should be done as a semi-emergency, and while awaiting preparations for surgery, she should be under constant hospital surveillance in case of spontaneous rupture of membranes.

If the diagnosis is made during labor and if dilatation is incomplete, one should preserve the integrity of the membranes while preparations are made for emergency cesarean section. The patient should be in the Trendelenberg position, with medical personnel in constant attendance.

Cord Prolapse. When diagnosis has been made, as a result either of prolapse outside the introitus or of vaginal examination, there are two aspects of management to consider: *immediate* (but temporary) action, and *definitive* measures for the most appropriate delivery.

Immediate Phase: One should minimize cord compression by putting the patient in either a Trendelenberg or a knee-chest position, and by exerting digital pressure against the presenting part to elevate it from the pelvis. Attempts at replacement of the cord within the uterus are futile and time-consuming, and should not be attempted except perhaps to replace the cord from outside the introitus to within the vagina. Rhodes states that spasm of the umbilical vessels may be provoked by cooling of the cord outside the vagina.¹² Spasms also may be caused by unnecessary manipulation of the cord. Pure oxygen should be given by mask to provide maximum oxygenation of umbilical-vein blood.

Delivery Phase: Rapid, logical thought should then be given to the best manner of delivery. If there is sufficient evidence to indicate intrauterine death of the infant, the normal process of labor should be allowed to occur, and vaginal delivery should be completed. However, auscultation for heart tones and palpation for cord pulsations must be executed meticulously before one concludes that the infant is dead. Prolapse should not call for "hopeful procrastination."

Assuming viability of the fetus, one should choose cesarean section as the mode of delivery, unless one of the following contraindications¹³ is present: (1) Imminent delivery by the vaginal route is possible without injury to the mother or fetus; (2) A fetal abnormality is known to be present (e.g., hydrocephalus, etc.); (3) The fetus is so premature that chances for its survival are extremely poor. If vaginal delivery can be accomplished only by midforceps or internal version and extraction, the experience of the operator must be the limiting factor. If he is inexperienced, then perhaps abdominal delivery is the safer choice for mother and infant. Although operative delivery is of an emergency nature, it must always be performed with an aseptic technic and with a wise selection of anesthesia.

Promptness of abdominal delivery is aided remarkably if one has an opportunity to perform emergency cesarean section in the delivery room. Close proximity of the operating room to the labor area provides a saving of time in moving a prolapse patient for examination and for surgery if indicated. Such facilities are of equal importance following diagnosis of cord presentation during labor, if prolapse occurs at the time of vaginal examination, or if it is discovered during vaginal examination with abnormal presentation. At this Hospital, emergency cesarean sections are ordinarily performed in the delivery room, and 19 of the 28 sections of this study were done there. The opportunity to do surgery under these circumstances, thereby eliminating the transfer of patients to an operating suite, may well have saved the lives of several infants.

Types of Delivery. Table 3 indicates the numbers

TABLE 3
TYPES OF DELIVERY AND FETAL MORTALITY

Procedure	Cases	Infant Deaths			Per Cent of Perinatal Mortality
		Per Cent	Still-born	Neo-natal	
Cesarean Section	28	45.5%	0	0	0
Spontaneous Vaginal	8	12.9	1	1	50%
Low Forceps	2	3.2	1*	0	25%
Mid Forceps	3	4.8	0	0	0
Breech Extraction	8	12.9	0	0	0
Assisted Breech	11	17.8	1	0	25%
Internal Version and Extraction	2	2.9	0	0	0

* Infant was dead when the mother was first examined.

of patients delivered by the various modalities employed in this series. Fetal salvage also is shown.

Twenty-eight infants (45.5 per cent) were delivered by cesarean section, and all survived. Nineteen deliveries were low cervical, and nine were of the classical type. This section rate is nine times the usual incidence of approximately 5 per cent at this Hospital.

Thirty-two (51.6 per cent) deliveries were vaginal. Most were assisted breech (one included Duhrssen's incisions). Next in order were equal numbers of breech extraction and spontaneous vertex deliveries. Last in order of frequency were the forceps deliveries.

Two infants (2.9 per cent) were delivered by internal version and extraction; one was a second twin, and the other was a transverse lie in which membranes ruptured after complete cervical dilatation.

Maternal Dangers. Cord prolapse is associated with an elevated maternal morbidity rate. The increased numbers of vaginal examinations and operative deliveries are at least partially responsible.

1. Morbidity. Sixteen patients (25.8 per cent) had puerperal infection, whereas the usual rate is 6.9 per cent. The influence of operative delivery is confirmed by the observation that 15 of these had cesarean sections and the other patient had a breech extraction. Four other women were given prophylactic antibiotics after operative deliveries, but did not become morbid.

2. Postpartum Hemorrhage. Fourteen women lost 600 cc. or more of blood at time of delivery (22.5 per cent), whereas the usual incidence for the same period is 2.9 per cent.

3. Mortality. There was one maternal death in this series (1.6 per cent). A 36-year-old G6-P5 had spontaneous rupture of membranes before labor. Examination revealed a transverse lie, with cord prolapsed into the vagina and an arm through the 4 cm.-dilated cervix. A classical cesarean section was performed in great haste, and regrettably,

without adequate abdominal preparation. The operator was undoubtedly influenced by marked fetal bradycardia. A 3,070 Gm. infant was delivered and had an uneventful neonatal hospitalization. The mother, however, died on the third postpartum day from overwhelming sepsis.

CONCLUSIONS

Prolapse of the cord is not entirely preventable, but knowledge of the factors predisposing to it should make obstetricians aware of the situations in which it is most likely to occur. Perinatal mortality can be reduced remarkably by diagnosing such conditions promptly, and by having a logical plan of management.

Similarly, cord presentation should be anticipated in certain situations when there is an improperly-filled pelvic inlet. Amniotomy should not be done until cord presentation has been ruled out. Elevation of the presenting part to allow more fluid to escape after amniotomy not only is unnecessary but may predispose to prolapse.

Unless vaginal delivery can be accomplished more promptly through a completely dilated cervix and with greater safety to mother and infant, liberal use of cesarean section provides an improvement in fetal salvage. This opinion is shared by other recent essayists.^{3, 7, 10, 13} Table 4 shows the cesarean section rates at this Hospital. As the

TABLE 4
COMPARISON OF INCIDENCE, CESAREAN SECTION RATE AND INFANT DEATH RATE FOR THE THREE REPORTS OF THIS HOSPITAL

Years Studied	Deliveries	Incidence		Perinatal Death Rate (Corrected)
		Cord Prolapse	Cesarean Section Rate	
1926-39*	9,546	0.61%	1/58= 1.7%	27/58=46.6%
1940-53	15,578	0.40%	5/63= 7.9%	27/63=42.8%
1954-62	14,457	0.43%	28/62=45.5%	4/62= 6.4%

* Infants under 1500 Gm. excluded.

incidence has risen, the perinatal mortality rate has declined. Willingness to perform cesarean sections should be abetted by the opportunity to perform this surgery in the delivery room, in an emergency such as cord prolapse, with a minimum lapse of time and under good operating-room technic.

SUMMARY

1. Sixty-two cases of umbilical cord prolapse or presentation occurred at this Hospital among 14,457 deliveries during the years 1954 through 1962. This incidence of 0.43 per cent is comparable to those reported in large series.

2. Predisposing factors have been discussed in

the light of information obtained from this study, and of the opinions of recent essayists.

3. The potential danger of amniotomy performed for induction or for stimulation of labor has been stressed.

4. The favorable perinatal mortality rate of 6.4 per cent (corrected) is largely attributable to prompt diagnosis and rapid, logical management. These statistics have been discussed from the standpoint of fetal and maternal factors as well as of various types of management. One maternal death occurred in this series.

5. Indications for the several types of delivery have been discussed, and a more liberal use of cesarean section has been advocated.

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Ureteral Obstructions

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OUR ORDINARY METHODS for classification of diseases tend at times to mislead us in making a diagnosis and outlining therapy, since the evidences of and therapy for disease processes have been related to specific entities, rather than to a symptom-pathologic complex about an organ system. Just as the concept of intestinal obstruction is useful to the general surgeon in his diagnosis and treatment of the many causes of that condition, so the concept of ureteral obstruction may be of help in understanding and treating the multitude of conditions which cause it.

Ureteral obstructions are common. During 1961 a total of 129 new patients with various types of ureteral obstruction were admitted to the Urological Service of the University Hospitals. That number does not include cases where obstruction was due to prostatism, or vesical or cervical tumors. It comprised 0.4 per cent of all admissions to University Hospitals, and 6 per cent of all admissions to the Urological Service.

Because of the anatomical relationships of the ureter (Figure 1) and its function of urine trans-

port from the kidney to the bladder, the signs and symptoms of ureteral obstruction may be extremely variable. Renal infection, renal pain, and renal insufficiency may be evidences of this condition. An abdominal mass may be due to hydronephrosis, or it may be due to a retroperitoneal tumor involving the ureter. Pyuria and hematuria may or may not be present, or may be the presenting symptoms. Although symptoms of ureteral obstruction may be unimpressive, especially in the presence of associated disease, the existence of such obstruction may be exceedingly important to the physician in outlining the management of the individual patient.

Recent developments in the technic of examining the ureter, both anatomically and functionally, have revolutionized our understanding and our therapy of ureteral obstructions. Pressure studies, retrograde and excretory pyelography, cystography, the concept of ureteral reflux, the utilization of radioactive substances for the study of ureteral function, and cineradiography have all contributed to this increased knowledge.

Tables 1 and 2 are outlines of various intrinsic and extrinsic, congenital and acquired causes of ureteral obstruction. There are many of these, and the symptoms and signs they produce vary greatly, depending upon the location of the lesion, on the nature of the lesion, and on whether both ureters are involved. This multiplicity of situations brings up many problems in differential diagnosis and management. It is the purpose of this paper to

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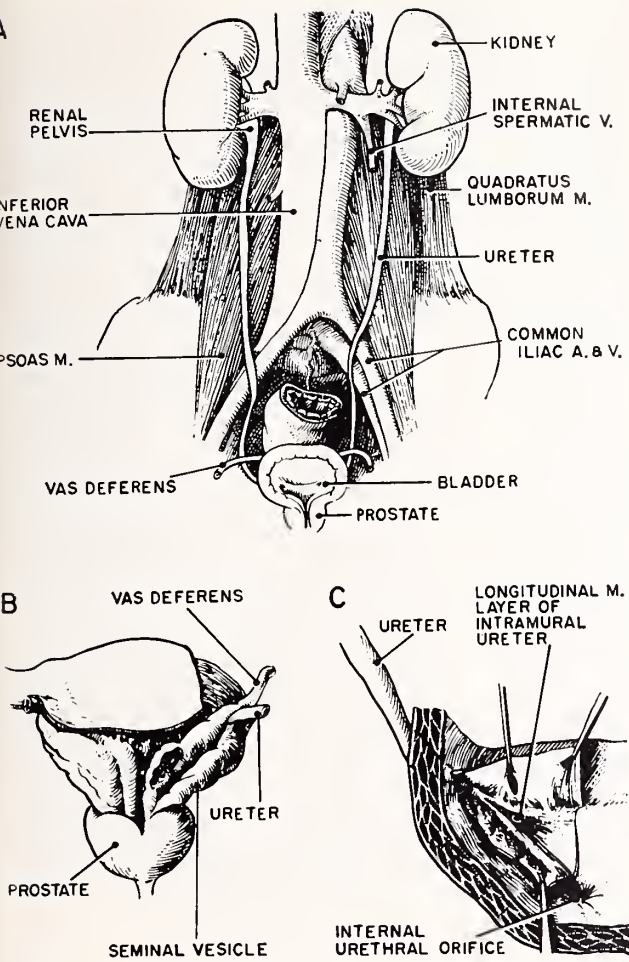


Figure 1. Anatomical relationships of the ureter. From Flocks and Culp: SURGICAL UROLOGY. Chicago, Year Book Publishers, Inc., 1962.

present specific examples illustrative of the complexities involved.

OBSTRUCTIONS OCCASIONED BY ECTOPIC URETERAL ORIFICES

The problems associated with obstruction secondary to ectopic ureteral orifices are exemplified in the following cases.

A female, age 17, had voided well all her life but presented a history of constant, slight urinary incontinence. There had been no evidence of renal infection, and she had experienced no pain. Intravenous pyelography showed essentially normal urinary tracts bilaterally. The urine was clear, cystoscopy was essentially within normal limits, and there were two orifices normally placed and a normal trigone. Nevertheless, because of the history, an ectopic ureteral orifice draining an upper segment of one kidney was suspected. There was no evidence of an ectopic orifice in the vagina, but one was finally found in the urethra, just distal to the sphincter. It was catheterized (Figure 2), and was found to be the opening of a dilated ureter which drained the small hypoplastic upper segment of the left kidney. When this had been surgically removed, the patient's difficulties disappeared, and she has been well since.

TABLE 1
URETERAL OBSTRUCTIONS

I. Intrinsic	
A. Congenital	B. Acquired
Stricture at ureteropelvic junction	Ureteral calculus
High insertion of ureter into renal pelvis	Ureteral neoplasm
Ureterocele	Ureteral diverticulum
Stricture at ureterovesical junction	Strictures due to chronic inflammation or previous trauma
Megaloureter	
Ectopic ureteral orifice	
Congenital valves	

TABLE 2
URETERAL OBSTRUCTIONS

II. Extrinsic	
A. Congenital	B. Acquired
Anomalous vessel at ureteropelvic junction	Carcinoma of ovary
Congenital bands at ureteropelvic junction	Carcinoma of cervix
Retrocaval ureter	Carcinoma of prostate
Anomalous vessel along course of ureter	Carcinoma of bladder
	Carcinoma of colon
	Prostatitis and seminal vesiculitis
	Periureteritis plastica
	Bladder diverticulum
	Retroperitoneal neoplasm
	Endometriosis
	Aneurysm of abdominal aorta

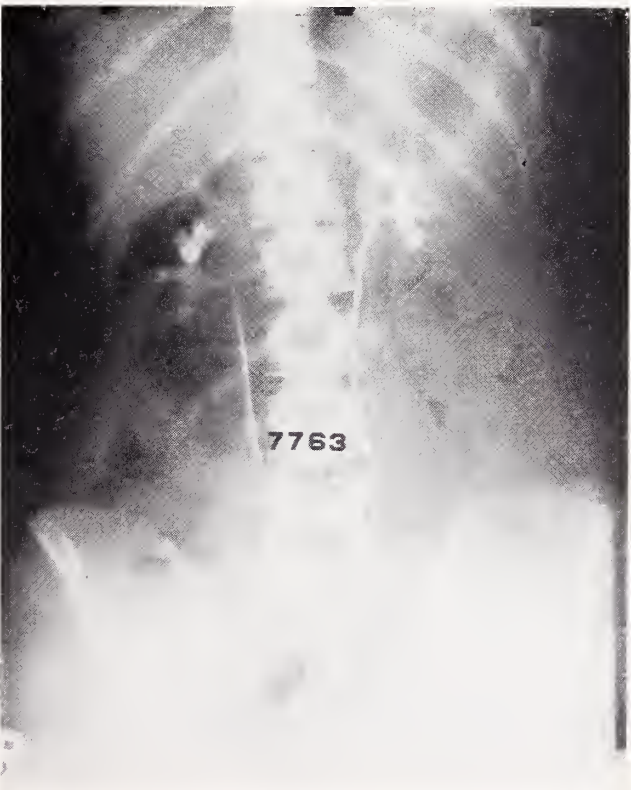


Figure 2. Catheterization showed an ectopic orifice in the urethra, just distal to the sphincter. It was the opening of a dilated ureter which drained a small hypoplastic segment of the left kidney.

The point here is that a reduplication may displace the kidney only slightly or not at all. The pyelogram may look normal, and the ectopic orifice may be present in the urethra and, therefore, invisible. It may be necessary, if one suspects such an anomaly, to do an exploratory procedure to look for two ureters in a single sheath on either side.

A male patient presented an unusually interesting set of symptoms. His ectopic ureteral orifice was located inside the sphincter. He experienced recurrent attacks of left kidney infection, and when the attack was full blown, this was associated with perfectly normal urine, because the ureteral orifice was completely blocked. When the patient was feeling well and was apparently having no difficulty, as evidenced by the absence of fever and leukocytosis, the urine, nevertheless, was loaded with pus and organisms. He was not incontinent. The pyelograms (Figure 3) showed marked displacement of the lower half of the left kidney. An ectopic ureteral orifice was suspected because of the suggestive x-ray findings, but none was ever found.

This case illustrates the important point that at times there may be perfectly normal urine with an acute renal infection because the affected side is completely obstructed. A partial nephrectomy solved the problem in this case.

Congenital anomalies associated with ureteral obstruction should always be looked for when other congenital anomalies, particularly those in-

volving the genital tract or lower intestinal tract, are present. Figure 4 is illustrative of such a condition. The patient was born with an imperforate anus, and a left lower quadrant colostomy was established shortly after birth. During the ensuing year, she had recurring attacks of urinary tract infections, and intravenous pyelograms showed the presence of a marked hydroureter and hydronephrosis on the left, as was better demonstrated by the delayed cystogram. The left ureteral orifice was ectopic, and a congenital bladder-neck constriction was present. All these anomalies are examples of some of the urinary tract problems associated with congenital anomalies of the pelvic organs.

NEUROGENIC AND MYOGENIC LESIONS

Neurogenic and myogenic lesions involving the lower ureter and the ureterovesical junction, associated with ureteral reflux and/or adynamic obstruction to the outflow of urine, are of tremendous interest. They are appearing and are being picked up more and more frequently, particularly in children. The exact anatomic and pathophysiologic alterations are not yet completely understood, but knowledge is increasing rapidly, particularly as a result of cystographic and cine-radiographic studies which are being correlated with the symptoms and the results of therapy. Operative procedures for the correction of ureteral reflux, for plastic reconstruction, and/or removal of the lowermost portion of an adynamic



Figure 3. In this case an ectopic ureteral orifice was suspected, because of a marked displacement of the lower half of the left kidney, but none was ever found. A partial nephrectomy solved the problem of recurrent kidney infection.



Figure 4. Patient was born with imperforate anus, and when urinary tract infections occurred, intravenous pyelograms showed a marked hydroureter on the left. The left ureteral orifice was ectopic, and a congenital bladder-neck contracture was present.

ureter or for a complete diversion of the urinary stream to an ileal conduit—any of these is useful in an appropriate situation.

An example is the case of a 21-year-old white male who had been perfectly well until he began to have severe left upper quadrant pain on the day of admission. Two days previously, his child had jumped on his abdomen without causing him any immediate pain. On admission, he was found to have an ill-defined left upper quadrant mass, and the urinary sediment was clear. Intravenous pyelograms showed only faint function in a left hydronephrosis at three hours. The retrograde pyelogram (Figure 5) demonstrated huge bilateral hydronephrosis and hydroureter. Our impression was a congenital megaloureter, and a ureteroneocystostomy was carried out. He has subsequently done well. As is not infrequently true, the severely damaging congenital ureteral obstruction was an insidious one, and its discovery was fortuitous.

URETERAL CALCULUS

The most common acquired type of ureteral obstruction is ureteral calculus. There has been much discussion with regard to the best way of dealing

with various types of ureteral calculus. A small one will pass spontaneously, but larger ones need to be removed almost immediately, especially when they have occurred in the upper half of the ureter. If a calculus is in the lower portion of the ureter, it may pass spontaneously, or it can be removed by surgical or transvesical instrumental technic. There has been much controversy regarding the use of instruments to remove stones in the upper ureter and kidney pelvis. Instrumental procedures have been satisfactorily carried out by Ellik and others, but there are dangers which should be emphasized, in that trauma to the ureter is almost certain to happen when a stone is pulled down over this tremendous distance. In fact, about 15 years ago, Ockerblad reported two deaths from massive hemorrhage associated with tearing of the ureter when an attempt was made, by means of an instrument, to pull down ureteral stones which were too large.

The differential diagnosis between non-opaque stone, blood clots, and papillary tumors of the ureter may be difficult. A non-opaque filling defect associated with uric acid calculus may give all the symptoms and signs of a ureteral tumor, and the pyelograms may be indistinguishable. At times, in our experience, cytologic studies of the urine from the kidney may be of great value. There is a high degree of correlation between positive cytologic findings and the presence of a tumor in the ureter. However, one can't rely completely upon this cor-



Figure 5. Retrograde pyelogram demonstrated a huge bilateral hydronephrosis and hydroureter. Our impression was a congenital megaloureter.

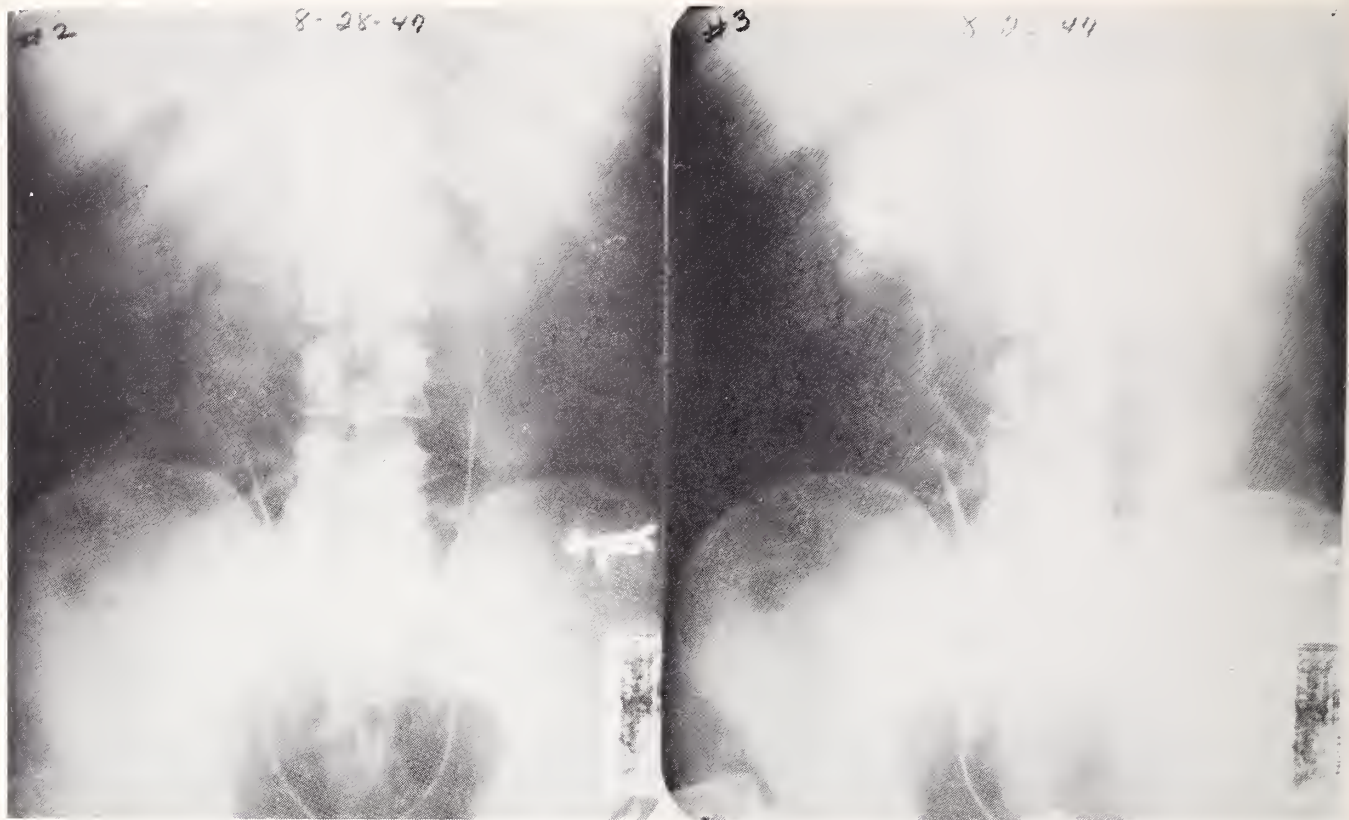


Figure 6. In this patient a diagnosis of ureteral tumor was made on the basis of cytologic studies of urine from the kidney, but when a nephroureterectomy was performed, a uric acid calculus was found, rather than a tumor.

relation. A diagnosis of ureteral tumor was made and a nephroureterectomy carried out on the patient whose x-rays are shown in Figure 6, and at the time of surgery, a uric acid calculus was found, rather than a tumor.

The x-ray in Figure 7 shows a negative filling defect at the left ureteropelvic junction. Since it had many of the characteristics, a tentative diagnosis of uric acid calculus was made, but at surgery a tumor was found at the ureteropelvic junction.

Another interesting variation was in the findings on a patient 17 years of age who had had left flank pain and hematuria of four years' duration following trauma. From the intravenous pyelograms shown in Figure 8, the diagnosis was left congenital-type hydronephrosis, with poor emptying of the left renal pelvis. At the time of operation, the ureter was found to contain a frond-like mass protruding through the incision in the ureter and filling up the entire ureter. A ureterectomy was carried out, and benign polyps were found extending throughout the length of the ureter.

Tuberculosis involving the ureter may produce ureteral obstruction, but the findings may not be typical of tuberculosis and may suggest the possibility of ureteral tumor. This is illustrated in the case of a 32-year-old woman who entered the hospital with a short history of gross hematuria. The pyeloureterograms shown in Figure 9 had the appearance of a constricting lesion involving the lower end of the right ureter. No organisms were found, but grossly bloody urine came from the right ureteral orifice. A diagnosis at the time of

the operative procedure confirmed the finding of a tuberculous stricture of the ureter. In contrast, a very similar clinical picture was exhibited by the middle-aged female whose films are shown in Figure 10. At the time of operation and upon pathologic study of the specimen, her difficulty was found to have been a ureteral carcinoma.

Injury to the ureter during pelvic surgery may present problems in diagnosis and management. The pyelograms in Figure 11 are those of a 45-year-old woman with a large fibroid of the uterus. She underwent hysterectomy, and during the procedure massive bleeding required replacement by a good deal of banked whole blood. Postoperatively, the patient passed absolutely no urine. Because of the lengthy operation, a significantly long period of hypotension and the administration of a large quantity of blood, it was felt that the anuria was secondary to lower nephron nephrosis, and she was treated conservatively. She remained anuric, and on the twelfth postoperative day, when her blood urea nitrogen was markedly elevated and her abdomen became distended, urologic consultation was requested. Obstruction was met a few centimeters above the bladder, confirming a diagnosis of bilateral ureteral obstruction. Bilateral ureteroneocystostomy was carried out, with a good result and marked improvement in the patient. Incidentally, on follow-up examination, she was found to have bilateral ureteral reflux, but had absolutely no symptoms, and her intravenous pyelograms (Figure 12) were normal. In this case,

(Text concluded on page 229)

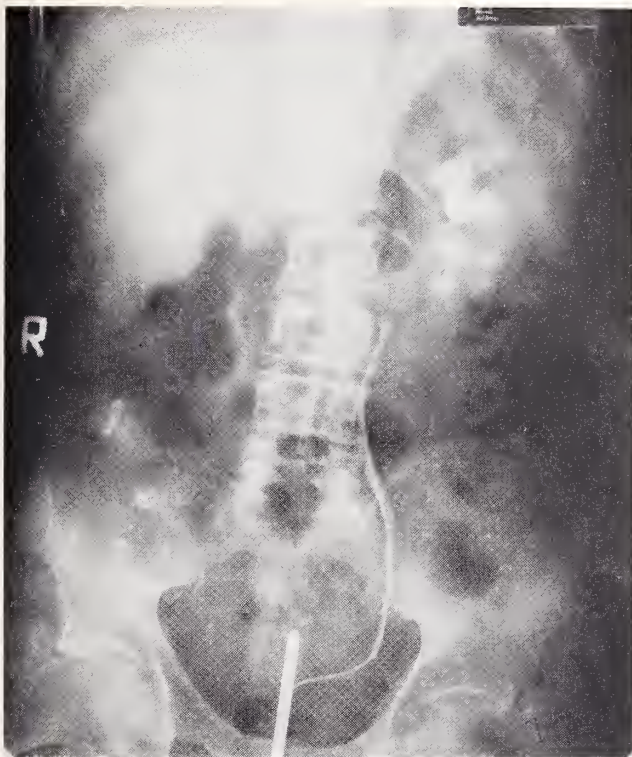


Figure 7. This shows a negative filling defect at the left ureteropelvic junction, and since it had many of the characteristics, a tentative diagnosis of uric acid calculus was made. At surgery, a tumor was found at the ureteropelvic junction, however.

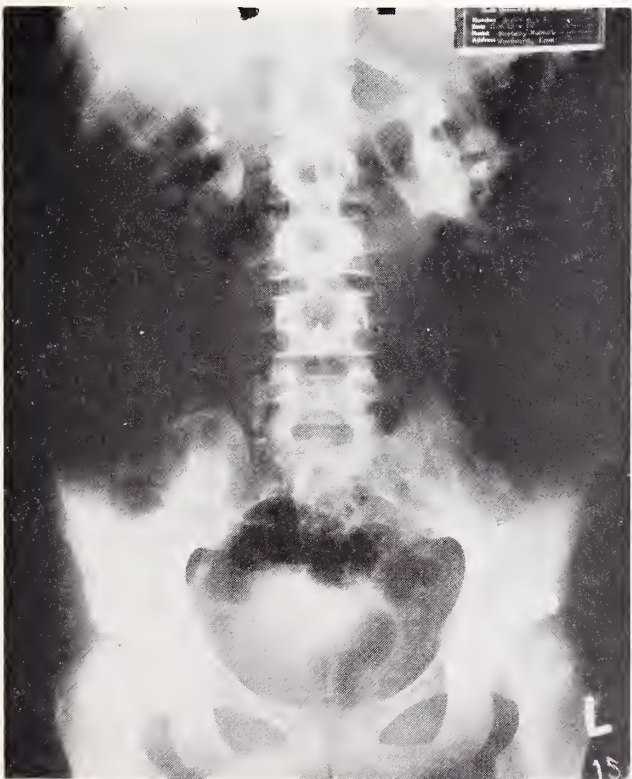


Figure 8. This patient had had left flank pain and hematuria for four years following trauma. From intravenous pyelograms such as this, the diagnosis was left congenital-type hydronephrosis, with poor emptying of the left renal pelvis. At operation, however, the ureter was found to contain a frond-like mass that filled the entire ureter and protruded through the incision that had been made in it.



Figure 9. Tuberculosis involving the ureter may produce ureteral obstruction, but the findings may not be typical, and may suggest the possibility of ureteral tumor.



Figure 10. This patient exhibited a clinical picture similar to that of the patient whose ureter is shown in Figure 9. At operation, however, her difficulty was found to be a ureteral carcinoma.

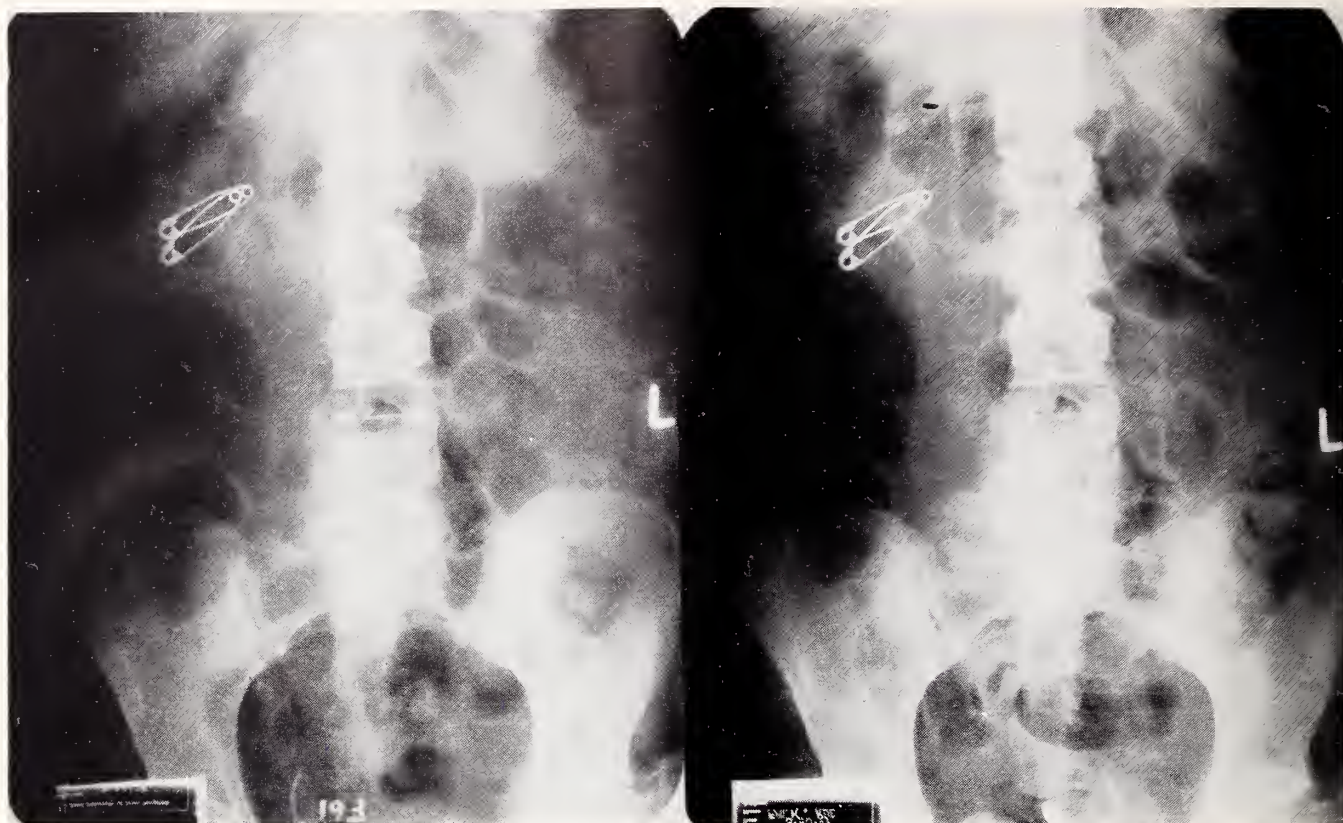


Figure 11. Pyelograms of a 45-year-old woman with a large fibroid of the uterus. During hysterectomy a great deal of bleeding occurred, and afterward the patient was anuric. On urologic consultation, obstruction was met a few centimeters above the bladder.

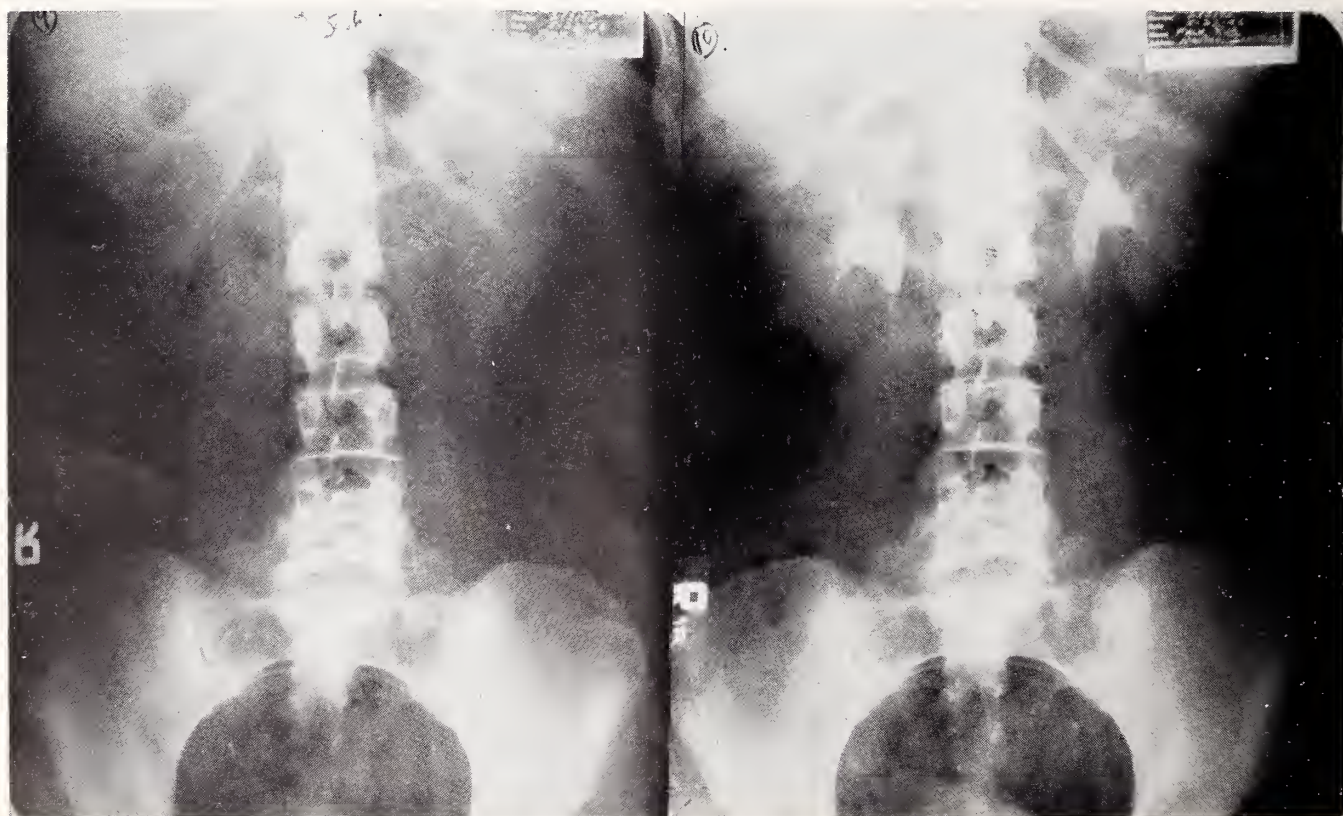


Figure 12. Intravenous pyelograms taken during follow-up of the same patient. Bilateral ureteroneocystostomy had been carried out with a good result.

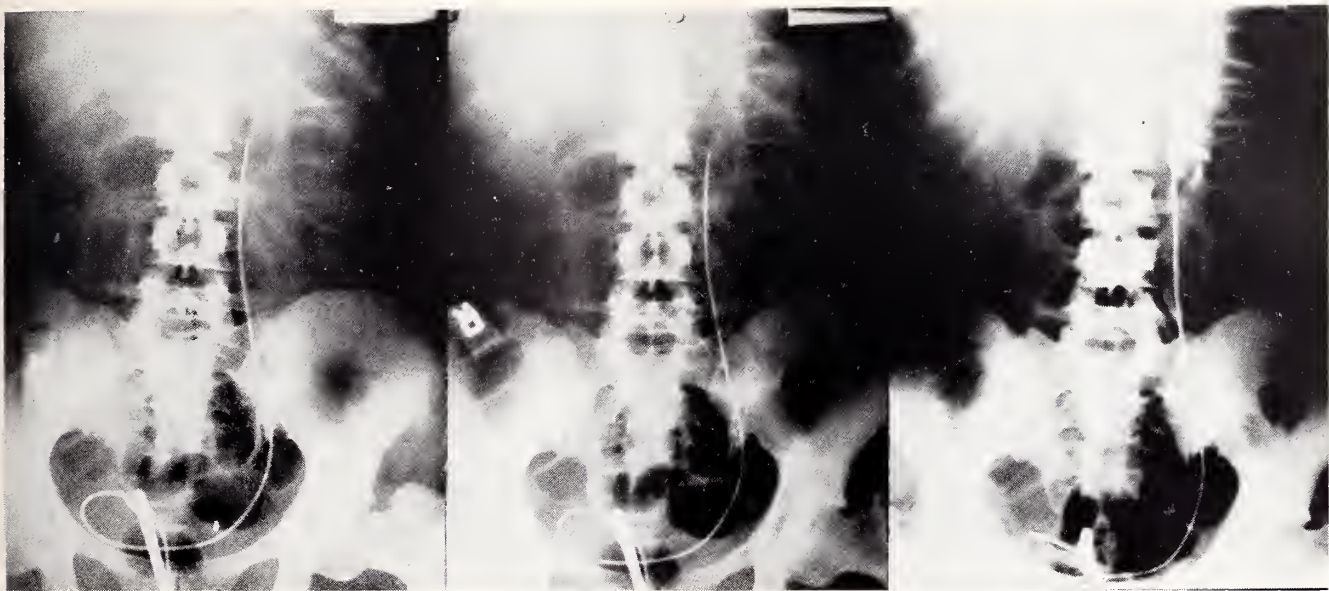


Figure 13. The ureter of the good right kidney had been ligated, and the hypoplastic left kidney was the sole organ of urinary excretion. A right ureteroneocystostomy remedied the situation.

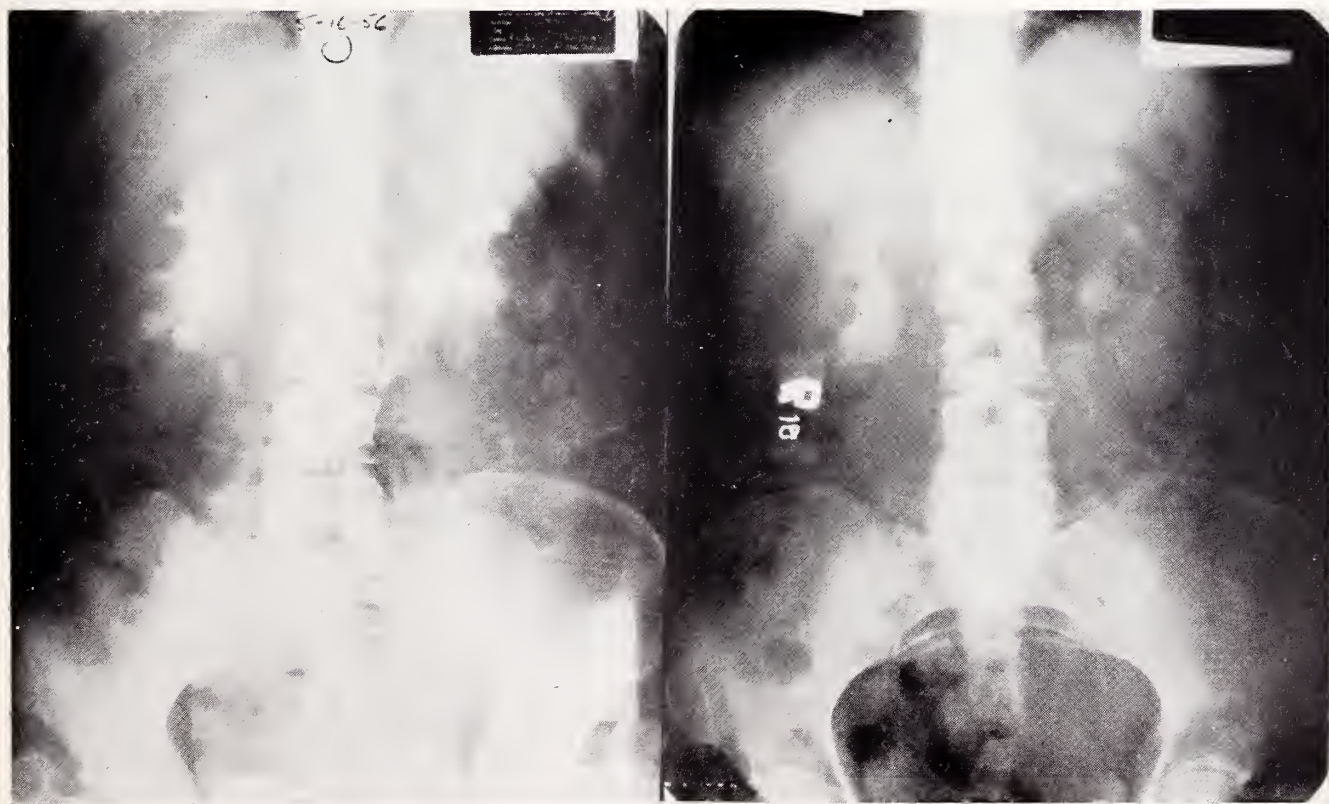


Figure 14. Retrograde pyelograms of a patient admitted with a diagnosis of septicemia secondary to pyelonephritis. The correct diagnosis was periureteritis plastica.



Figure 15. These pyelograms demonstrate right lower ureteral obstruction. A diagnosis of endometriosis involving the right lower ureter was confirmed at surgery.



Figure 16. Same patient as in Figure 15. A partial ureterectomy and a reimplantation of the ureter brought about a complete resolution.

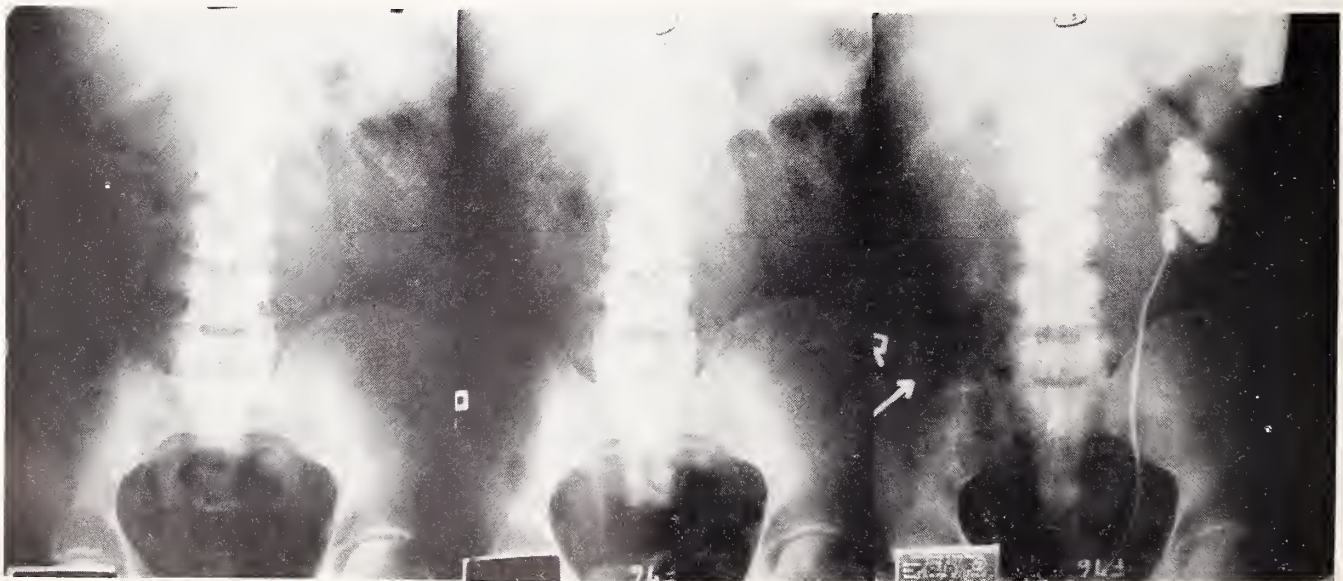


Figure 17. Gradual encroachment by a retroperitoneal sarcoma upon the upper portion of the ureter.

the fact that no urine was passed was very suggestive of mechanical obstruction, for except in bilateral renal artery thrombosis, complete anuria is extremely rare. Even in severe lower nephron nephrosis, 30 to 40 cc. per day will be excreted.

An interesting variation of this is illustrated in the case of a female who had a hysterectomy, and who, postoperatively, passed about 100 cc. of urine daily. She rapidly became uremic. The clinical picture appeared typical for lower nephron nephrosis, although there were no apparent etiologic factors such as there had been in the previous case. Studies showed that the ureter of the good right kidney had been ligated, and that the hypoplastic left kidney, shown in Figure 13, was the sole organ of urinary excretion. A right uretero-neocystostomy remedied the situation.

IATROGENIC OBSTRUCTION

Another type of injury to the ureter occurs during extensive dissection for extirpation of pelvic neoplasms. Because of the close proximity of the ureter to cervical, uterine and bowel cancer, the ureteral adventitia may be excised during the procedure, with resultant loss of blood supply and innervation. The ureter then becomes adynamic and dilated. Sometimes months of therapy are necessary before the hydrodynamics of the ureters adjust themselves to the situation. During this interval, infection and other complications may arise.

Periureteritis plastica is a relatively uncommon, but perplexing cause of extrinsic ureteral obstruction. It is usually bilateral, but occasionally it presents as unilateral disease. The patient whose retrograde pyelogram is shown in Figure 14 was admitted to the hospital with a diagnosis of septicemia secondary to pyelonephritis. She was found to have renal insufficiency, a secondary anemia and a pyelogram showing the characteristic medial displacement of the ureters, and marked dilation of the upper ureters and renal pelvis. Although

this entity may be confused clinically with retroperitoneal sarcoma, the latter is rarely bilateral and does not characteristically displace the ureters toward the midline. When the obstruction had been surgically corrected, the infection cleared and she became well. Though the initial diagnosis of septicemia and pyelonephritis was correct in part, it was secondary to the extrinsic ureteral obstruction which had been demonstrated radiographically.

Another cause of extrinsic acquired ureteral obstruction occurred in a young woman who had been experiencing recurrent attacks of right pyelitis every three or four weeks. A medical student noted that these coincided with her menstrual periods. The pyelograms in Figure 15 demonstrate the right lower ureteral obstruction. A diagnosis of endometriosis involving the right lower ureter was confirmed at surgery. A partial ureterectomy and a reimplantation of the ureter were done, with complete resolution (Figure 16).

Figure 17 illustrates the gradual encroachment upon the upper portion of the ureter by a retroperitoneal sarcoma. This was confirmed upon surgical exploration. Irradiation brought about the relief of pain, regression of the retroperitoneal tumor and return of function of the left ureter. Dissemination of the tumor continued, however, and the patient died two years later.

SUMMARY

In review, then, the concept of ureteral obstruction may be of as great value to the urologist in the assessment of the individual patient, as the concept of intestinal obstruction is to the general surgeon. The conditions which produce disturbance to the outflow of urine from the kidney pelvis to the bladder are multitudinous, and present a tremendous variety of clinical pictures. An understanding of these, and of the possibilities involved, is of great value to the physician and his patient.

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 58-YEAR-OLD WHITE MAN, who weighed 94 lbs. and who had been seen at the University Hospitals for the previous two years because of incapacitating rheumatoid arthritis and chronic bilateral pleural effusions, entered the hospital for his sixth and final time because his wife, upon whom he depended for care at home, had been rushed to the hospital for emergency care following an onset of rectal bleeding.

He did very well during the first five days of his hospital stay, but then became quite nervous and anxious on the sixth day, when his wife underwent hemorrhoidectomy. Thereafter, coughing and dyspnea became increasingly severe, and he displayed mild cyanosis of the lips and rales in the lungs. His oral temperature ranged between 97 and 100°F. His blood hemoglobin concentration was 13.0 Gm. per cent, and his leukocyte count was 8,750/cu. mm., with a differential including 46 per cent bands, 41 per cent mature polymorphonuclear cells, 10 per cent lymphocytes and 3 per cent monocytes. No additional hematologic or bacteriologic studies were recorded, and no radiologic examinations were done. Therapy included digitoxin, Amodrine, Medihaler, phenobarbital, Bufferin, Darvon, Equanil, cough medicines and milk of magnesia, all in appropriate dosages. On the evening of the thirteenth hospital day, he was found dead in bed.

The patient's arthritis had begun when he was 40 years old, and had been treated off and on with salicylates and with alfalfa tea, both of which seemed to produce relief of the stiffness and pain which affected mainly his wrists and ankles.

When he was 47 years old an appendectomy was carried out in his community hospital. Three days after his operation, he had a second surgical procedure because of bowel obstruction. One week later, a third exploratory laparotomy disclosed mesenteric adhesions. After that, his abdominal wound became infected and broke down, so that a secondary closure of the wound had to be carried out four months after the original appendectomy.

Because of his arthritis, he ceased operating his service station when he was 49 years old, and thereafter was not gainfully employed.

His first admission to University Hospitals had occurred two years before his death, when he was 56 years old. During the preceding four months, he had been troubled by a persistent cough productive of frothy white sputum, chest pain, malaise and anorexia. His weight had decreased from 140 to 125 lbs. He had smoked from one to two packs of cigarettes per day since the age of 18 years, and his sister had died of pulmonary tuberculosis. At the time of his first admission he had mild symmetrical polyarthritis, with fusiform fingers and moderate limitation of motion of most of the large joints of the extremities. Numerous nodules were present overlying extensor tendons. Suggestions of a right-sided pleural effusion were noted on examination of the chest, and radiologic examination confirmed that condition and revealed a calcified right hilar node. Right posterior thoracentesis yielded 360 ml. of cloudy fluid which had a specific gravity of 1.015, and contained 60 per cent lymphocytes, 40 per cent polymorphonuclear cells and no red blood cells. Culture of this fluid yielded no growth of bacteria. Attempts to identify tubercle bacilli in a culture of this fluid were unsuccessful. Attempts to identify tubercle bacilli in this fluid by staining and by culture in the guinea pig were likewise fruitless, even though the patient subsequently showed a mild reaction to second-strength PPD skin testing. Examination of the pleural fluid for malignant cells also yielded negative findings. Although the initial physical findings and chest x-rays revealed no fluid in the left pleural space, bilateral pleural effusions were demonstrable radiologically within a week after admission.

Numerous additional studies were accomplished during this first hospitalization. The patient was not anemic. His total leukocyte counts ranged near 8,500/cu. mm., from 70 to 80 per cent of these cells being polymorphonuclear. His erythrocyte sedimentation rates were 54 to 65 mm./hr. His total serum protein concentration was 5.9 Gm. per cent,

with 4.1 Gm. per cent albumin, and 1.8 Gm. per cent globulin. A serum electrophoresis revealed the following distribution of proteins (with normal values given in parentheses): albumin 45.9 (61.1); alpha-1 globulin 9.9 (5.1); alpha-2 globulin 17.8 (8.8); beta globulin 16.1 (12.4); gamma-prime globulin 2.6 (2.0); and gamma globulin 7.7 (10.6 per cent). The latex and bentonite tests for rheumatoid factor were both positive, and rare lupus erythematosus cells were reported on one of two preparations examined. Urinalyses yielded normal findings, and the blood urea nitrogen, creatinine and uric acid concentrations were all normal. Skin tests for histoplasmosis, blastomycosis and coccidioidomycosis were negative, and serologic tests for brucellosis, typhoid fever and leptospirosis were also negative. Two blood cultures yielded no growth.

From the time of his first admission until his death two years later, he spent a total of nearly 12 months in University Hospitals because of persistent bilateral pleural empyemata, which failed to respond to intensive combined medical and surgical treatment. Large amounts of fluid were repeatedly drained from both pleural spaces, but the fluid always reaccumulated. This fluid was usually sterile, but on two occasions it yielded hemolytic *Staphylococcus aureus* by culture. Repeated attempts to identify tubercle bacilli and malignant cells in the fluid were always unsuccessful. Bronchoscopy and a right bronchogram revealed normal findings. When a left thoracotomy was done for open pleural biopsy, the parietal and visceral pleura appeared finely granular, and in areas were covered with a thick layer of whitish granular material. Cultures of the 3,500 ml. of cloudy yellow fluid obtained during this procedure were negative for bacteria, acid-fast organisms and fungi. Microscopic examination of a cell block of the spun sediment revealed large amounts of eosinophilic-staining amorphous debris, but no malignant cells. Pathologic study of the biopsied pleura showed "chronic pleuritis" with no evidence of malignancy, no giant cells and no acid-fast organisms or fungi, but revealed questionable rods by the Gram-staining technic. After that thoracotomy, pleural fluid continued to accumulate bilaterally, and drained spontaneously through the old left thoracotomy wound. Therefore, he had indwelling tubes draining the left pleural space for the last 16 months of his life.

Steadily progressive deterioration characterized the man's course. Congestive cardiac failure responded well to digitalization. Severe hypochromic anemia was an intercurrent problem, but it was corrected by supplemental iron therapy. His rheumatoid arthritis waxed and waned. Necrosis of his rheumatoid nodules became a serious problem, with drainage of pus from these superficial lesions. Bufferin and Darvon were employed, along

with physical therapy, in the management of his arthritis problems. No steroid agents are recorded as having been administered.

One month before his final admission, while he was hospitalized here for nine days for a general review of his many difficulties, scleromalacia perforans of both orbits was noted for the first time. Draining subcutaneous nodules were present over the sacrum, both hips, both lateral fibular heads and the right elbow. His left chest tube was draining yellowish, cloudy fluid. Urinalysis then revealed normal findings, and his hemoglobin concentration was 15 Gm. per cent, the total leukocyte count was 6,700/cu. mm., and his erythrocyte sedimentation rate was 86 mm./hr. Roentgenograms of the chest showed a partial pneumothorax on the right side, with a fluid level visible at the right base. No further thoracic surgical treatment was recommended at that time, and he was discharged home on a regimen which included Bufferin and Darvon as needed for comfort, digitoxin, and hydrogen peroxide for cleansing of the chest tubes and draining nodules.

Dr. Raymond Sheets, Internal Medicine: We do not intend to discuss this protocol as an unknown, although I think you will find that there is a great deal that is unknown about the disease with which it deals. We shall first have a few comments from Mr. Dale Phelps, a junior student.

Mr. Dale Phelps, junior ward clerk: The patient's history is typical of rheumatoid arthritis. The main problem to be considered is the bilateral pleural effusion. Because of the biopsy and the characteristics of the pleural fluid, we can be confident that it was an inflammatory reaction of the pleura, and thereby we can rule out pleural effusion secondary to extrinsic organ pathology. The possibility of tuberculous pleurisy has to be considered because of the history, the positive PPD and the calcific hilar nodes. The failure to demonstrate the organism and exudate does not rule this out. We do feel that cultures of sputum and gastric washings were indicated on the patient's initial admission, but the protocol does not indicate that they were done. Neoplasms must be considered, especially in view of the weight loss and the history of smoking. If there were any, they probably would have been picked up on repeated cytologic studies or chest roentgenograms. We feel that both tuberculosis and neoplasm would have been verified by the exploration and biopsy, if they had been present.

Our impression is that the pleural effusion was a manifestation of the rheumatoid arthritis, although we cannot explain the lymphocyte count in the fluid or the fact that no rheumatoid nodules were discovered in the pleura on exploration. As to the cause of the patient's death, we feel that in view of the dramatic shift to the left of his differential cell count, and his generally debilitated condition, he must have suffered an acute bacterial

infection—probably a pneumonia. We cannot rule out the possibility of pulmonary or myocardial infarction, for the protocol gives no indication of his course during the last seven days of his life.

Dr. Sheets: We are going to dispense with staff discussion of the protocol, and move right along. Dr. Van Epps, would you like to show us the roentgenograms?

Dr. Eugene F. Van Epps, Radiology: I have chosen a few representative roentgenograms from the many that were taken during the patient's lifetime. The first one shows bilateral pleural effusions associated with pulmonary edema. Two weeks later, the pulmonary edema had disappeared, but small bilateral pleural effusions remained. A month later, a poorly-defined infiltrate could be seen in the left lower lobe, which I feel represented a pneumonitis. Small bilateral effusions were still present. Then, later, a small right pleural effusion was seen, and then a larger, loculated effusion laterally on the left. This latter collection was larger three months later. The examination then showed a thoracotomy tube in the pleural cavity, following removal of the empyema collection. The cavity had not expanded. The final roentgenogram revealed irregularity of aeration at the site of the previous cavity, and a hydro-pneumothorax on the right. No cardiac enlargement or failure was demonstrated. These roentgenograms confirmed the presence of long-standing bilateral pleural effusions, the left becoming loculated and requiring operation. One year later, there was a severe hydropneumothorax.

Dr. Jack M. Layton, Pathology: At autopsy, the right pleural cavity was filled with 1,750 ml. of purulent exudate. This had resulted in massive collapse of the right lung. The pleural surfaces were greatly thickened with yellowish-gray fibrinopurulent exudate showing evidence of organization. In addition, they exhibited massive areas of fibrinoid degeneration and necrosis of a type which would fit with the rheumatoid lesion. There was acute pyogenic lobular pneumonia in the underlying lung, with purulent bronchitis manifest also. The left pleural cavity was mostly obliterated by dense fibrous and fibrinous adhesions between the visceral and parietal layers. The left lung was extensively adherent to the thoracic wall. A locus from an old empyema communicated with the overlying skin by a fistula with a cutaneous opening 4.5 x 2.0 cm. Purulent bronchitis, patchy lobular pneumonia and emphysema were present in the left lung. The pericardium was greatly thickened and was covered with a fibrinous exudate which displayed extensive necrosis. Only 15 ml. of straw-colored fluid was present in the pericardial cavity. Other manifestations of sepsis included hyperplasia of splenic red pulp, bone marrow and lymph nodes in the mediastinum and the pulmonary hilar regions, edema and "toxic granulations" in the liver,

and foci of mild hyperplasia in the thyroid gland.

Rheumatoid arthritis was manifested by changes in the joints, skin and subcutaneous tissue, serous surfaces, cardiovascular system and endocrine organs. Multiple joints of the hands and wrists, and large joints of the extremities were involved. A fibrous pannus was found over the articular surface of the lower end of the femur, with thickened, fibrosed synovial membrane in the joint. The joint capsule was thickened. Multiple subcutaneous rheumatoid nodules—some recent, some draining and some scarred—were observed in the regions of the sacrum, hips, elbows, occipital areas, hands and knees. These were characterized by central areas of coagulative and fibrinoid necrosis, surrounded by palisaded large mononuclear cells, fibroblasts and leukocytes, and with a dense fibrous wall at the periphery. Primarily, the nodules were in the subcutaneous tissues. A similar type of histopathologic reaction was observed in the pericardium and pleura. The splenic capsule was thickened, fibrosed and hyalinized. The muscle and skin were atrophic, and there was severe generalized wasting. Hyaline changes were noted in cells in the pituitary. A lump in the left breast showed gynecomastia. Areas of lipid depletion and focal hyperplasia had occurred in the adrenal glands.

The vermiform appendix was missing. Intra-abdominal adhesions and two vertical abdominal scars were residues from the previous surgical operations.

Let me summarize by saying that this man had a systemic disease—rheumatoid disease. His crippling had been brought about by processes which affected his joints. The primary change was a proliferation of the synovial membrane and of the perichondrium of the articular cartilage, combined in many instances with a proliferation of the connective tissue and endosteum of the epiphyseal marrow directly beneath the cartilage. Proliferation of the synovial membrane had produced a layer of granulation tissue which extended over the joint cartilage as a pannus. Destruction and absorption of joint cartilage had occurred at the point of contact with the granulation-tissue pannus. Atrophy of bone had increased gradually. The joints were enlarged owing to a thickening of the joint capsule and an increase in the amount of synovial membrane.

As a result of the progressive granulomatous reaction in the synovial membrane and articular connective tissues, the joint cartilage and bone had been *destroyed*, and the supporting connective tissue structures had been deformed. The joint destruction and deformity are usually proportional to the intensity and duration of the active inflammatory process. Thus, an important feature to be kept in mind is that any agent which will (1) decrease the intensity of the active inflammatory process, or (2) decrease the duration of

the active inflammatory process will diminish the ultimate joint destruction and crippling. Death followed pulmonary insufficiency which was the result of massive pleuritis, empyema and pneumonia.

Dr. W. D. Paul, Rehabilitation: What about the blood vessels?

Dr. Layton: In rheumatoid arthritis there is very often a segmental or focal vasculitis, mostly an arteriolitis or venulitis in clinically involved tissues, and most often in advanced or highly active disease. With steroid therapy, a fulminating vasculitis may appear, and seems to be related to a resurgence of disease activity. Severe ischemic necrosis, including myocardial infarction, may result. This man did not have appreciably severe vascular lesions.

Dr. Sheets: Dr. Layton has told us something about the anatomy of this disease. Dr. Routh, would you please tell us something about its biochemistry?

Dr. Joseph Routh, Biochemistry: The biochemist has been concerned about rheumatoid arthritis for a great many years, and has been especially interested in laboratory studies dealing with it. The increase in the viscosity of the patient's blood was once used as an indication of the disease. Later, the increase in the sedimentation rate of the blood cells provided a measure of the progress of the disease. An attempt was then made to correlate these changes with variations in the plasma proteins in rheumatoid arthritis. By means of salt fractionation procedures, it was observed that there was a decrease in albumin and an increase in globulin, especially of euglobulin. A common finding in the disease was a decrease in the A/G ratio.

As the technic of electrophoresis became available, several investigators reported decreases in albumin, along with definite increases in alpha and gamma globulins and fibrinogen. It was also noted that the increase in alpha globulins was marked in the early acute stage of the disease, and that an increase in the gamma globulin followed in the later, more chronic stage.

For the past 15 years, our laboratory has been investigating the plasma and serum proteins of patients in various stages of rheumatoid arthritis. Using a uniform and standardized technic of free electrophoresis, we have compared the plasma and serum proteins of normal individuals with those of patients with different types of arthritis. In our studies, the early acute stage of rheumatoid arthritis has been characterized by an increase in the alpha₁ and gamma globulins, and a slight decrease in albumin. The chronic stage of the disease is marked by a greater increase in the gamma globulin component and a greater decrease in albumin, with only a slight increase in the alpha₁ fraction of plasma. In patients who experience re-

missions or recover from rheumatoid arthritis, there is a definite change from the abnormal pattern of the plasma proteins towards a normal distribution. If plasma specimens from a large series of patients in various stages of the disease are subjected to electrophoresis, the average values are of interest. These show a decrease in albumin and an increase in the alpha₁, alpha₂ and gamma globulins and in fibrinogen, when compared to normal plasma.

Patients with two other types of arthritis were studied for comparison with rheumatoid arthritis. A series of plasma specimens from patients with osteo or hypertrophic arthritis were subjected to electrophoretic analysis. The changes in the plasma proteins were similar to those observed in rheumatoid arthritis, with the exception that the increases in gamma globulin were not so marked. A study of a group of patients with rheumatoid spondylitis revealed interesting differences when compared to patients with rheumatoid or osteo arthritis. The fact that the average values were similar to those from normal plasmas further strengthened our conclusion that this disease does not represent a typical arthritic condition.

Several investigators have studied the effect of therapeutic agents on the progress of rheumatoid arthritis. Since both ACTH and cortisone have been found effective, we studied changes in the plasma proteins during and after treatment with these agents. During the therapeutic regime, the abnormal concentrations of the plasma protein components tended to change toward normal values. When therapy was discontinued, the distribution gradually reverted to the arthritic pattern.

Of more recent interest is the so-called rheumatoid factor which was recognized in 1955. This is a factor, present in the plasmas or serums of patients with rheumatoid arthritis, which has the property of agglutinating particulate bodies such as red blood cells, latex or bentonite particles that are coated with gamma globulin. Studies with the ultracentrifuge demonstrated that the factor is a gamma globulin complex of high molecular weight. This complex has a sedimentation rate of 22 S (Svedberg units) and can be dissociated into two major constituents by treatment with acid or urea. Of these two components, the smaller has a 7 S value, and the other a 19 S value. The larger exhibits all the typical reactions of the rheumatoid factor.

Several methods such as cellulose ion exchange chromatography, elution from sensitized sheep cells and various techniques of ultracentrifugation have been used to purify the factor. One method involves diluting the serum 14:1 with distilled water, and then lowering the temperature to produce a precipitate in the cold. This precipitate is removed and purified further by chromatography

of the redissolved precipitate on a carboxymethyl cellulose column. Studies on the purified factor have established a sedimentation constant of 18.8 S and a mobility in paper electrophoresis associated with that of the fast gamma globulin fraction.

The high carbohydrate content of the rheumatoid factor establishes it as a mucoprotein, and as its concentration increases in the serum, there is a higher ratio of polysaccharide to protein, which may be of diagnostic significance. This ratio in the serum of a normal adult is 1:8, and it increases progressively with the severity of the rheumatoid arthritis.

An even more promising lead in the study of rheumatoid arthritis and the rheumatoid factor is the technic of immunoelectrophoresis. By a combination of electrophoresis in an agar gel, followed by precipitin reactions with anti-sera, a series of arcs can be obtained which describe the individual protein components in the patient's serum. The patterns yield a better definition of the components than do other types of electrophoresis, and may furnish additional information in the study of rheumatoid arthritis. Our laboratory is currently investigating the advantages of immunoelectrophoresis in the identification of plasma and serum proteins in disease.

Dr. William E. Connor, Internal Medicine: Do you believe, Dr. Routh, that the rheumatoid factor is the pathogenic agent of rheumatoid disease, or that there is some other cause?

Dr. Routh: As a biochemist, I believe it is the result of some other cause. I don't believe that the rheumatoid factor is the pathogenic agent. It's an indicator.

Dr. Sheets: Dr. Gauchat, would you try to put some of these findings together?

Dr. Robert D. Gauchat, Pediatrics: Concerning the important question raised by Dr. Connor—one to which a definitive answer cannot yet be given—there is some evidence to suggest that the rheumatoid factor may have a hereditary basis. Studies of the families of rheumatoid arthritic patients have revealed a significantly higher incidence of positive tests for the rheumatoid factor among the close relatives of rheumatoid arthritic patients (parents, siblings and children) than would be encountered in a randomly selected population. Many of these close relatives have positive tests for the rheumatoid factor, but show no clinical evidence of rheumatoid arthritis.^{1, 2}

It seems to me that one of the most important lessons to be learned from a study of this patient is the generalized systemic nature of the disease that we call rheumatoid arthritis. In addition to characteristic polyarthritis and subcutaneous nodules, this man had pericarditis, pleuritis and scleromalacia perforans as *manifestations*, not complications, of his disease.

Many years ago, visceral lesions were reported

in patients dying of rheumatoid arthritis,³ but in the vast literature concerning this disease, the paper that Ellman and Ball published in 1948⁴ is a classic because in it they were first to propose the term *rheumatoid disease*. After describing a group of rheumatoid arthritics who had pulmonary lesions similar to those found in this patient, they suggested that the protean manifestations of the rheumatoid vascular inflammatory process made *rheumatoid disease* preferable to *rheumatoid arthritis*. At the present time, the concept of *rheumatoid disease* underlies our efforts to identify causative factors, and forms the basis for all present modes of treatment. We no longer concentrate our attention solely upon the patient's painful joints, dramatic and distressing though the arthritis may be. In addition to alleviating his arthritis, we must attempt to counteract the generalized systemic inflammatory illness in its broadest scope, if we are to give the rheumatoid patient proper medical care.

Within the past few years, several important contributions to our understanding of the pleural lesions have appeared in the literature.⁵⁻⁹ On the basis of the clinical studies reported in these papers, four cardinal clinical characteristics of the pleuritic lesions of rheumatoid disease have been recognized:

1. The rheumatoid patients who develop pleuritic lesions, with effusions, are usually middle-aged people, though pleuritis can occur at any age.

2. The rheumatoid patients with pleuritic lesions are nearly all males, a finding which contrasts rather surprisingly with the usually accepted 2:1 ratio in favor of females as regards rheumatoid arthritis.

3. The arthritis which these particular middle-aged male patients have is characterized by recurring "episodic flares," interspersed with spontaneous remissions.

4. The concentration of glucose in the pleural fluid obtained by thoracentesis in these cases is extremely low—usually less than 20 mg. per cent—and cannot be increased by the intravenous administration of glucose. Otherwise, this pleural fluid has no distinctive qualities. It is yellow or straw-colored, and somewhat cloudy and non-bloody, and the concentration of protein in it tends to parallel that of the patient's serum. Obviously, bacteriologic cultures and a cytologic search for neoplastic cells has been carried out, yielding negative results in all the cases reported.

A word must be said concerning the management of the pleuritic lesions and the pleural effusions. Before the diagnosis of rheumatoid pleuritis can be accepted, every effort must be made to rule out the possibility of a coexisting bacterial infection, tuberculosis, histoplasmosis or neoplasia by means of appropriate studies. Needle biopsy of the parietal pleura has been employed successful-

ly by Schools and Mikkelsen,⁹ who were able to demonstrate typical rheumatoid nodules in such biopsies done on three patients. Others⁸ have not been so fortunate, finding only non-specific inflammatory reactions in their pleural biopsies. Thus failure to identify a typical rheumatoid nodule in one pleural biopsy does not rule out rheumatoid pleuritis. Measurement of the concentration of glucose in the pleural fluid is now considered an essential diagnostic procedure, because the presence of an extremely low sugar concentration may be characteristic of rheumatoid pleuritic effusion.

These pleural effusions are usually of moderate volume and are often well tolerated by the patient, even though they may persist for long periods of time. When their volume is large enough to embarrass respiration, periodic thoracentesis may be necessary. Constant alertness for the possibility of secondary infection is obviously required. These effusions often clear spontaneously, and resolution has also been observed to coincide with the inauguration of treatment with adrenocorticosteroids⁶ and with an antimalarial drug in two cases.⁷

The patient's scleromalacia perforans again reminds us of the generalized nature of rheumatoid disease. First described in 1931,¹⁰ this rare condition develops when rheumatoid nodules occur in the sclera of an orbit. Such nodules are pathologically identical with rheumatoid nodules that occur elsewhere in the body. When located in the sclera, they tend to undergo necrosis and ulceration, leading to perforation of the orbit. Resulting losses of orbital fluid cause blindness. Only about 30 cases have been reported in the literature to date. These lesions respond poorly to treatment with steroids as well as with gold salts.¹¹ However, Bick¹² reports that surgical reinforcement of the affected globe by a graft of fascia lata preserved useful vision for at least 15 months in his patient.

Secondary infection is a major hazard faced by all patients who have rheumatoid arthritis. The patient whom we have been discussing succumbed very rapidly to the onslaught of presumed bacterial pneumonia and pyopneumothorax. Cobb and his colleagues at Massachusetts General Hospital have shown that pneumonia accounts for about 25 per cent of deaths in rheumatoid patients.¹³ Pyoarthrosis, skin abscesses and septicemia also occur quite frequently. Recently, British workers^{14, 15} have emphasized the importance of the staphylococcus as an infective agent in these patients, perhaps because of the prolonged periods of hospitalization that these people undergo, with resultant intensive exposure to hospital strains of staphylococci. Reviewing the protocol in today's case, you will note that the only significant microorganism ever cultured from the patient's pleural fluid was the hemolytic *Staphylococcus aureus*. Many factors undoubtedly increase

the susceptibility of these patients to infection.

Dr. Sheets: Dr. Paul, would you care to make some comments?

Dr. Paul: I might add that in 1897 Still reported finding pleural effusion at autopsy in three children who had juvenile rheumatoid arthritis. No further reports appeared until 1943, when the Mayo group stated that pleural effusion was the most common cause of death in rheumatoid arthritis.

As has just been said, the term *rheumatoid arthritis* should be changed to *rheumatoid disease*. It is now known that rheumatoid arthritics have a generalized disease, many of them showing changes in blood vessels. Arteritis is the basis for the neurologic changes seen so often in arthritics. It may also result in pulmonary changes—the so-called Wegner's granulomatoses. These have aroused considerable discussion among physicians. Some believe that Wegner's phenomena are merely part of the rheumatoid disease, but others think that they constitute a non-rheumatoid collagen disease. Besides the arteritis, there are abnormal changes in the eyes, shifts in the distribution of plasma proteins, and changes in the viscera, in the skin and even in the myocardium and endocardium. Rheumatoid arthritics, when challenged with 50 Gm. of glucose, show a mild diabetic type of response. Pleural effusion is a common complication of rheumatoid disease, and may occur months or years before the arthritis. It has been reported recently that an individual can have recurrent pleural effusion and a positive test for rheumatoid factor up to 12 years before the onset of the arthritis.

Before one treats arthritics, it is necessary to screen them very carefully for complications. We now know that steroids, if given in too large doses or in varying doses, can intensify the complications. At first, fibrinoid collects within the small blood vessels, causing an arteriolitis and a venulitis which may lead to a clinical picture of periarteritis nodosa. Many of these patients progress to death, but a few reverse and recover. During the past two years, we have seen three patients who eventually recovered from this severe complication. We have followed the course of one woman who is still alive. Six years ago, she had an acute, nearly fatal illness, and a biopsy at that time was reported as showing periarteritis nodosa. Steroids act entirely differently when used in rheumatoid disease than when used in replacement therapy, when used in massive doses for a severe protein reaction, or when used as treatment for bronchial asthma.

Patients with rheumatoid disease can tolerate only small doses of steroids, since they have the substrate that is conducive to the development of complications, as has been shown by the findings in the patient presented this afternoon. Prednisone is the steroid that is used most often in the treat-

ment of rheumatoid arthritis. We have found that the maximum dose is 8 mg. per day. Only occasionally do we prescribe 10 or 12.5 mg. per day. We use multiple small doses of 0.5 or 1.0 mg. throughout the day, and reduce the total daily dose as soon as feasible. These might sound like homeopathic doses, but many of our patients will have flares when the dose is reduced by as little as 1 mg. The newer steroids, especially those containing fluorine, have caused considerable difficulty, for we are unable to control the symptoms so easily as with prednisone. The maximum daily dose of cortisone is 37 mg.; of hydrocortisone 10 to 15 mg.; of dexamethasone (Decadron) 2.5 mg.; and of triamcinolone 6 mg. (despite the fact that the pharmaceutical manufacturers have a 16 mg. tablet of triamcinolone on the market).

We have found that higher doses cause complications such as changes in bone, especially the femoral head. It is becoming commonplace to take roentgenograms of a patient who has been on steroids and to find either one or both femoral heads have been partly destroyed, displaying the appearance of aseptic necrosis. Several arthritics have been admitted to our rehabilitation ward with intra-arterial occlusions secondary to vasculitis. One man had an occlusion of the spermatic artery, with gangrene and sloughing of the scrotum and testicles. Death resulted from severe infection. He, too, had a pleural effusion. Several have had pustules in the mucous membranes from which a staphylococcus or a streptococcus was recovered. The infection subsided after the steroids were discontinued.

My plea is that you never tell a patient he has rheumatoid disease unless you are sure of the diagnosis. A pain in the neck is no excuse for a diagnosis of rheumatoid arthritis. In many instances, the test for the rheumatoid factor may be negative. These patients may have few exacerbations and show little or no progression of the disease. On the other hand, when a patient has an arteritis and a high titer for the rheumatoid factor, he is in serious difficulty. Recently, we saw a woman who had this combination, and in a few weeks she developed gangrene of the fingers and toes, and died following a mesenteric infarct. It is in this group of patients that we find marked peripheral neuritis and gangrene of the lower extremities. It must be remembered that rheumatoid disease rarely kills an individual. There is no excuse for substituting a fatal disease by treating the patient too vigorously!

Dr. Ian Maclean Smith, Internal Medicine: Do you use very much gold therapy?

Dr. Paul: Yes, we use gold quite often. Our difficulty is that we must send patients home, and cannot keep close check on them. For example, just two weeks ago a woman was started on gold therapy, and returned to us with a marked derma-

titis due to the heavy metal. When she was readmitted, it was necessary for us to give her large doses of steroids to treat the toxic dermatitis. Since we cannot follow our patients after sending them home, we are necessarily limited in the number for whom we prescribe gold.

Dr. Henry E. Hamilton, Internal Medicine: How many patients are poisoned by gold therapy?

Dr. Paul: We managed recently to poison two out of about five or six.

Dr. Hamilton: Is that about par for the course?

Dr. Paul: Yes, except for one point. Dr. Bayles, of Boston, has found that if a patient develops a reaction to gold and if the drug is stopped before the symptoms become too severe, the arthritis subsides and remains in remission for long periods. He has reported the case of a nurse who had a remission for about 10 or 12 years after a reaction to gold. Gold was administered again for an exacerbation of the arthritis, and again she developed a reaction, followed by a remission which has lasted up to the present. He hopes his patients have mild reactions. We, too, would like our patients to have mild reactions, but before they return to us there is a possibility that they might receive further injections of gold, as happened to the woman whom I mentioned.

Dr. Sidney E. Ziffren, Surgery: Your mainstays are the salicylates?

Dr. Paul: Our mainstays are physical therapy and salicylates to maintain motion and function. We have used chloroquine, but it too has side effects. Recently, at a meeting of the American Rheumatism Association, we heard that chloroquine could be found in the urine five years after discontinuance of the drug. Subcapsular cataracts have been reported by many observers. The hair may become white, and that is an undesirable side effect. Also, we have found that chloroquine doesn't work very well in adults. At present, we are using a new non-steroid drug that seems to be effective, but we continue to rely on small doses of steroids, salicylates and physical therapy.

SUMMARY OF NECROPSY FINDINGS

Rheumatoid arthritis with

- a. joint destruction and deformity
- b. subcutaneous nodules, multiple
- c. atrophy of muscle and skin
- d. hyaline changes in pituitary gland

Pyogenic empyema thoracis, right (1,750 ml.)

- a. acute and chronic pleuritis, right
- b. lobular pneumonia, pyogenic, right
- c. massive collapse, right lung

Draining, loculated empyema thoracis, left, old

- a. dense pleural adhesions, left
- b. pleurocutaneous fistula, left
- c. purulent bronchitis and patchy lobular pneumonia, left
- d. emphysema, left lung

Chronic fibrinous pericarditis
Lipid depletion and foci of hyperplasia, adrenal glands
Reactive hyperplasia of splenic red pulp, bone marrow and lymph nodes in pulmonary hila and mediastinum
Edema and "toxic granulations," liver
Perisplenitis
Gynecomastia, left
Cachexia
Scleromalacia perforans (clinical)

STUDENTS' DIAGNOSES

Rheumatoid arthritis
Bilateral pleural effusions
Empyema thoracis
Pneumonia

CLINICAL DIAGNOSES

Rheumatoid arthritis
Empyema of the left thorax
Hydropneumothorax, right
Scleromalacia perforans
Necrotic rheumatoid nodules

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This artist's conception of the new Minimal Care Unit and research building now under construction at SUI shows how the buildings will look when viewed from the south. The buildings are being built south of the General Hospital and run east and west. The Minimal Care Unit will be seven stories high, and will be connected by a concourse to all seven floors of General Hospital. The research wing (on the right) will be five stories high. The Minimal Care Unit will have 256 beds, and will replace beds presently housed in temporary, war-surplus barracks units built in 1946. In addition to the patient care areas, the 88,800 square feet of floor space in the new building will provide room for new and expanded kitchen and dining facilities to serve the entire hospital. The primary requirement for patient admission to the Minimal Care Unit will be that the patient must be physically self-sufficient, ambulatory and able to care for himself without

significant nursing service or supervision. The general categories of patients who will be admitted include rehabilitative, diagnostic, and convalescent (following acute in-patient care). The first two floors of the new research building will house a 20-bed clinical research unit devoted to intensive clinical studies in such areas as metabolic imbalance, diabetes, various heart disabilities and special surgery. The third and fourth floors of the building will be used for research in children's diseases, metabolic and endocrine laboratories, biochemistry research in enzymes, research in obstetrics and gynecology, and hematology studies. The fifth floor will be devoted entirely to cancer research. The basement will provide space for research in medical electronics and will house the mechanical equipment for the building. It is expected that the new additions will be completed late in 1964.

Coming Meetings

IOWA

- April 3-5 Annual Meeting of the Iowa Tuberculosis and Health Association. Hotel Savery, Des Moines
- Apr. 7-10 Annual Meeting of the Iowa Medical Society. Fort Des Moines Hotel, Des Moines
- Apr. 12-13 Pediatric Conference (Raymond Blank Memorial Hospital for Children). Des Moines
- Apr. 25 and May 2 Third Annual General Practitioners' Seminar (Mental Health Institute and Iowa Chapter AAGP). Mental Health Institute, Independence
- Apr. 26-27 "Creative Approaches to Environmental Stress—The Fourth Institute on Preventive Psychiatry (S.U.I. Preventive Psychiatry Committee). Iowa City
- May 3-4 Iowa Eye Association. State University of Iowa, Iowa City
- May 8-9 Industrial Safety Association of Iowa. Hotel Savery, Des Moines
- May 16 Northwest Iowa Postgraduate Conference (Iowa Chapter of AAGP and the Education Division of Lederle Laboratories). Sheraton-Warrior Motor Inn, Sioux City

CONTINENTAL U. S.

- Apr. 1-4 "Perspective in Medicine"—15th Annual Scientific Assembly of the AAGP. McCormick Place, Chicago
- Apr. 1-4 American Radium Society. Mark Hopkins Hotel, San Francisco
- Apr. 1-5 Forty-fourth Annual Session of the American College of Physicians. Municipal Auditorium and Denver Hilton and Brown Palace Hotels, Denver
- Apr. 1-5 Thirty-sixth Annual Spring Congress in Ophthalmology and Otolaryngology (The Gill Memorial Eye, Ear and Throat Hospital). Roanoke, Virginia
- Apr. 1-12 Gynecology, Office and Operative. Cook County Graduate School of Medicine, Chicago
- Apr. 3-5 American Surgical Association. Westward Ho Hotel, Phoenix
- Apr. 3-5 Highlights of Modern Ophthalmology. Presbyterian Medical Center, San Francisco
- Apr. 5-6 "Farm and Home Safety—A Community Problem"—National Rural Safety Conference (AMA Council on Rural Health in cooperation with the National Safety Council, national farm organizations and allied health groups). Drake Hotel, Chicago
- Apr. 6 Minor Surgery: Office and Hospital. Presbyterian Medical Center, San Francisco
- Apr. 8-10 American Association for Thoracic Surgery. Shamrock Hotel, Houston
- Apr. 8-10 Otorhinolaryngology. University of Kansas Medical Center, Battenfeld Auditorium, Kansas City, Kansas
- Apr. 8-12 Board of Internal Medicine Review, Part II. Cook County Graduate School of Medicine, Chicago
- Apr. 9-11 American Association of Anatomists. Shoreham Hotel, Washington, D. C.
- Apr. 9-13 American College of Preventive Medicine. Philadelphia
- Apr. 10-12 Ophthalmology. University of Kansas Medical Center, Battenfeld Auditorium, Kansas City, Kansas
- Apr. 15-16 Pediatrics (University of Nebraska College of Medicine). The Nebraska Center for Continuing Education, 33rd and Holdrege, Lincoln
- Apr. 15-17 The Theory and Practice of Auscultation—Ninth Symposium sponsored by Hahnemann Medical College and Hospital. Sheraton Hotel, Philadelphia
- Apr. 16 Practical Aids in Diagnosis of Hemorrhagic Disorders (Neosho County Medical Society and the University of Kansas School of Medicine). The Southeast Kansas Tuberculosis Hospital, Chanute
- Apr. 16-19 American Dermatological Association. Homestead, Hot Springs, Virginia
- Apr. 16-20 American Physiological Society. Ambassador Hotel, Atlantic City, New Jersey
- Apr. 16-21 American Association of Immunologists. Traymore Hotel, Atlantic City
- Apr. 18-20 General Surgery. University of California, San Francisco
- Apr. 18-20 American Association of Railway Surgeons. Drake Hotel, Chicago
- Apr. 21-22 American Laryngological Association. Hollywood Beach Hotel, Hollywood, Florida
- Apr. 21-24 American College of Obstetricians and Gynecologists. Statler Hilton Hotel, New York City
- Apr. 21-25 International College of Surgeons—North American Federation. Ambassador Hotel, Los Angeles
- Apr. 22-24 American Academy of Pediatrics. Statler Hilton Hotel, Los Angeles
- Apr. 22-24 Anesthesiology. University of Kansas School of Medicine, Kansas City, Kansas
- Apr. 22-27 American Academy of Neurology. Leamington Hotel, Minneapolis
- Apr. 23-24 American Broncho-Esophagological Association. Hollywood Beach Hotel, Hollywood, Florida
- Apr. 23-25 American Laryngological, Rhinological and Otolological Society. Hollywood Beach Hotel, Hollywood, Florida
- Apr. 23-26 American College Health Association. Muehlebach Hotel, Kansas City
- Apr. 24-27 Seventh Postgraduate Course in Trauma (Chicago Committee on Trauma of the American College of Surgeons). John B. Murphy Auditorium, Chicago
- Apr. 26-27 American Otolological Society. Hollywood Beach Hotel, Hollywood, Florida
- Apr. 26-28 Recent Advances in Pediatrics, Neurology and Hematology. University of California, San Francisco
- Apr. 26-28 American Association of Pathologists and Bacteriologists. Netherlands Hilton Hotel, Cincinnati
- Apr. 27-28 The Narcotics Problem. University of California, Los Angeles
- Apr. 27-28 American Psychosomatic Society. Haddon Hall, Atlantic City
- Apr. 28-May 1 Expanded Surgery of the Nasal Septum and Closely Related Structures (Department of Otolaryngology with the cooperation of the American Rhinologic Society). Medical College of Virginia, Richmond
- Apr. 28-May 3 American Society of Abdominal Surgeons. New York City
- Apr. 29-30 Surgery and Trauma (University of Nebraska College of Medicine). Nebraska Center for Continuing Education, 33rd and Holdrege, Lincoln
- Apr. 29-May 2 Aerospace Medical Association. Statler Hilton Hotel, Los Angeles
- Apr. 29-May 3 Upper Extremities Prosthetics. UCLA
- Apr. 29-May 3 The Medical Care of the Adolescent (Harvard Medical School). Children's Hospital Medical Center, Boston
- Apr. 30-May 1 Association of American Physicians. Chalfonte-Haddon Hall, Atlantic City
- Apr. 30-May 1 Endocrine Society. Atlantic City
- May 1 American Society of Facial Plastic Surgery. Elysee Hotel, New York City
- May 1-2 Society for Pediatric Research. Seaside Hotel, Atlantic City
- May 1-2 Society for Pediatric Radiology. Atlantic City
- May 1-3 The Medical and Chirurgical Faculty. The Alcazar, Baltimore
- May 1-4 Pediatrics (University Hospitals of Cleveland). Steel Pier, Atlantic City
- May 2-5 Student American Medical Association. Sherman House, Chicago
- May 2-4 American Association for the History of Medicine. Statler Hotel, Boston
- May 3-4 American Pediatric Society. Seaside Hotel, Atlantic City
- May 3-6 American Psychoanalytic Association. Chase-Park Plaza, St. Louis
- May 4-5 Academy of Psychoanalysis. Ambassador Hotel, St. Louis
- May 5-9 American Society for Microbiology. Sheraton-Cleveland Hotel, Cleveland
- May 6-8 Annual Meeting of the State Medical Society of Wisconsin. Milwaukee
- May 6-9 National Geriatrics Society. Royal Orleans Hotel, New Orleans

May 6-10 **American Psychiatric Association.** Chase-Park Plaza, St. Louis

May 8-10 **American Association of Genitourinary Surgeons.** Drake Oak Brook Hotel, Chicago

May 9-10 **Nutrition and Atherosclerosis—a symposium sponsored by Minnesota Heart Association and General Mills.** Minneapolis

May 9-11 **American Thyroid Association.** Drake Hotel, Chicago

May 9-11 **American Association for Cleft Palate Rehabilitation.** Shoreham Hotel, Washington, D. C.

May 10-11 **pH, Acid-Base and Metabolic Problems in Anesthesia. Third Connecticut Postgraduate Anesthesia Seminar.** Hunt Memorial Hartford Medical Society Building, 230 Scarborough Street, Hartford

May 12 **Society for Pediatric Urology.** St. Louis.

May 12-15 **Nebraska State Medical Association, 95th Annual Meeting.** Sheraton-Fontenelle Hotel, Omaha

May 13-15 **American Gynecological Society.** Roosevelt Hotel, New Orleans

May 13-15 **Annual Meeting of American Thoracic Society in conjunction with the 59th Annual Meeting of the National Tuberculosis Association.** Denver

May 13-16 **American Urological Association.** Sheraton-Jefferson Hotel, St. Louis

May 13-17 **1963 National League for Nursing Convention.** Atlantic City Convention Hall, Atlantic City

May 20-22 **Annual Meeting of the Minnesota State Medical Association.** Duluth Hotel, Duluth

May 20-23 **American Proctologic Society.** St. Francis Hotel, San Francisco

May 20-23 **Surgery.** University of Kansas School of Medicine, Kansas City, Kansas

May 20-24 **Physiological Aspects of Cardio-Pulmonary Disease (American College of Physicians).** Indiana University Medical Center, Indianapolis

May 21-25 **American Association of Mental Deficiency.** Portland-Hilton Hotel, Portland, Oregon

May 23 **Fourteenth Annual Dr. F. G. Thompson, Sr., Lectureship (Thompson, Brumm and Knepper Clinic).** Clinic Building, 902 Edmond Street, St. Joseph, Missouri

May 23-24 **Thirteenth Annual Colorado Intern-Resident Clinic.** University of Colorado Medical Center, Denver

May 24-25 **Fifteenth Annual Clinical Conference of the Chicago Ophthalmological Society.** Drake Hotel, Chicago

May 27-29 **American Ophthalmological Society.** Homestead, Hot Springs, Virginia

May 29 **American Society for Gastrointestinal Endoscopy.** Fairmont Hotel, San Francisco

May 30-June 1 **American Gastroenterological Association.** Fairmont Hotel, San Francisco

ABROAD

Apr. 12-May 4 **Clinical Postgraduate Program in Japan and Hong Kong (UCLA in cooperation with Tokyo University School of Medicine, the Atomic Bomb Casualty Commission at Hiroshima, Hong Kong University School of Medicine and the Hong Kong Department of Health).** Write: Continuing Education in Medicine and Health Sciences, UCLA Medical Center, Los Angeles 24

Apr. 16-24 **International Meeting on Foreign Immunology, Medicine and Pathology (3rd), and International Meeting on Forensic Immunology and Toxicology (1st).** London. Write: Joseph W. Spelman, M.D., Philadelphia Dept. of Public Health, 13th and Wood Streets, Philadelphia 7

Apr. 18-20 **European Congress of Neurosurgery.** Rome. Write: Beniamino Guidetti, M.D., viale Università, 30, Rome

Apr. 21-23 **International Symposium on the Relationships Between Psychiatry and Teaching.** Turin, Italy. Write: Secretariat, Mental Hygiene Center of the Province of Turin, Via G. da Verazzano 4, Torino, Italy

Apr. 22-May 20 **International College of Surgeons, nine Latin American cities.** Write: Walter F. James, M.D., 1516 Lake Shore Drive, Chicago 10, Illinois

Apr. 25-30 **International Association of Accident and Traffic Medicine.** Rome. Write Milton Helpert, M.D., 520-1st Avenue, New York 16

May 2-5 **Hawaii Medical Association.** Princess Kaiulani Hotel, Honolulu

May 5-8 **Pan-Pacific Symposium on Aerospace Medicine.** Hilton Hawaiian Village, Honolulu. Write W. J. Kennard, M.D., Washington National Airport, Washington, D. C.

May 7 **World Health Assembly.** Geneva, Switzerland. Write: World Health Organization, Palais des Nations, Geneva

May 23-25 **International Society of Colon and Rectal Diseases.** Athens. Write: Harry E. Bacon, M.D., Temple University Medical Center, Philadelphia 40

May 28-June 2 **Second Asia and Oceania Congress of Endocrinology.** Sydney, Australia. Write: P. J. Claringbold, M.D., University of Sydney

June 2-5 **Canadian Ophthalmological Society.** Royal York Hotel, Toronto

June 9-15 **International Hospital Congress.** Paris. Write: J. C. J. Burkens, M.D., International Hospital Federations, 24/6 London Bridge Street, London, SE1

June 14-16 **Society of Obstetricians and Gynaecologists of Canada.** Delawana Inn, Ontario

June 23-28 **World Commission on Cerebral Palsy.** Copenhagen. Write: P. Hoeg Albrethsen, Samfundet for Vanfore, Esplanaden 34, Copenhagen K

June 23-28 **International Society for Rehabilitation of the Disabled.** Copenhagen. Write the Society, 701 First Avenue, New York City

June 27-29 **International Congress on Alimentary and Digestive Allergy.** Vichy, France. Write: Pierre Lignon, 24 boul des Capucines, Paris 9

June 27-29 **Neurosurgical Society of America.** London. Write: Courtland H. Davis, Jr., M.D., Bowman Gray School of Medicine, Winston-Salem, N. C.

June 28-30 **International Congress on Food and Digestive Allergy.** Vichy, France. Write Pierre Lignon, 24 boul des Capucines, Paris, 9^e

July 2-4 **Ciba Foundation Symposium on Cellular Injury.** London. Write: Ciba Foundation, 41 Portland Place, London W1

July 14-27 **Fifth International Postgraduate Course in Reconstructive Surgery of the Nasal Septum and External Pyramid.** University of Leiden, The Netherlands. Write: Prof. Dr. H. A. E. van Dishoeck, University of Leiden, Academisch Ziekenhuis, Leiden, The Netherlands. Or American Rhinologic Society, 530 Hawthorne Place, Chicago 13

July 21-25 **Third International Congress of Group Psychotherapy.** Milan, Italy. Write J. L. Moreno, M.D., Box 311, Beacon, New York

July 23-27 **International Society of Chemotherapy.** Stuttgart, Germany. Write: Clemens A. Hockethat, VA Hospital, 13th and Harrison Streets, Oakland, California

July 28-Aug. 1 **International Psycho-Analytical Congress.** Stockholm. Write L. Börge Löfgren, M.D., Narvavägen 25, Stockholm

Aug. 9-15 **International Congress on Nutrition.** Edinburgh, Scotland. Write: Alexander Adler, 30 Park Avenue, New York 16

Sept. 1-7 **International Congress on Orthopaedic Surgery and Traumatology.** Vienna. Write: Karl Chiari, Grillparzerstrasse 14, Vienna 1

Sept. 2-6 **International Congress on Clinical Pathology.** Mexico City. Write: E. Cervera B., M.D., Asociacion Mexicana de Laboratorio Clinico, Durango 213, Mexico 7, D.F.

Sept. 16-20 **Ciba Foundation Guest Symposium on Mother-Infant Interaction.** London. Write: Ciba Foundation, 41 Portland Place, London W1

Sept. 19-21 **Congress of the International Society of Cardiovascular Surgery.** Rome, Italy. Write: H. Haimovici, M.D., 862 Park Avenue, New York 21

Oct. **American Society of Plastic and Reconstructive Surgery.** Hawaiian Village Hotel, Honolulu. Write: T. Ray Broadbent, M.D., Secretary, 508 E. South Temple, Salt Lake City

Nov. 5-13 **Ninth Congress of the Pan-Pacific Surgical Association.** Honolulu. Write: F. J. Pinkerton, M.D., Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13, Hawaii

Nov. 13-Dec. 10 **First Pan-Pacific Mobile Educational Lecture Seminar.** New Zealand, Australia, Thailand, the Philippines, Hong Kong and Japan. Write Dr. F. J. Pinkerton, Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13



Attend the IMS Annual Meeting

The editors of the JOURNAL want to urge every Iowa physician to attend at least part of the IMS annual meeting, which is to be held at the Fort Des Moines Hotel, in Des Moines, on April 7-10. Almost without exception, the topics that are to be discussed are ones in which every doctor should be well informed, regardless of how he limits his practice. The men who are to speak about them are recognized authorities. The two-day scientific program has been accepted by the American Academy of General Practice for 10 hours of Category II credit.

The presentations on Monday, April 8, will include a paper on allergic emergencies by Dr. Lawrence J. Halpin, of Cedar Rapids, and one on the use of drugs in psychiatric therapy by Dr. Paul T. Cash, of Des Moines. The other addresses on that day, for the most part, will be in the socio-economic and legislative fields. These will include Dr. George H. Scanlon's presidential address, a speech by Mr. Jenkin L. Jones, editor of the TULSA TRIBUNE, whose article "American Morals," which appeared in several state medical journals and in the May 28, 1962, issue of U. S. NEWS AND WORLD REPORT, attracted considerable attention and innumerable approving comments. The most widely known of the men who are to participate in the Monday program are Mr. Roger Blough, of New York City, president of United States Steel Corporation, and Hon. Thruston B. Morton, U. S. Senator from Kentucky and formerly the national chairman of the Republican Party.

There are to be some discussions of socio-economic topics on the Tuesday program, as well. Mr. Robert B. Throckmorton, of Des Moines, will speak on "Kerr-Mills at Home," and Dr. Ernest B. Howard, of Chicago, assistant executive vice-president of the AMA, will talk on "The Medical Profession—1963." The medical lectures will deal with

Annual Meeting Phone Numbers

During the meeting physicians can be reached at the Hotel Fort Des Moines through the following telephone:

Des Moines 243-1161
Extension No. 9

cervical cytology, convalescence after surgery, stuttering, the use of hormones in the female, and cooperation between physicians and the faculties at colleges of medicine.

This year, instead of arranging for a single address as the Erskine Memorial Lecture, the Program Committee has chosen to present a panel discussion on "Cancer of the Breast," in which Dr. R. T. Tidrick, of S.U.I., Drs. Charles M. Blackburn, Donald S. Childs and Malcolm B. Dockerty, of the Mayo Clinic, and Dr. Charles W. McLaughlin, Jr., of the University of Nebraska, will be the participants.

Members of the IMS are reminded that the two panel discussions at this year's annual meeting—one on "What Time of Day Is It in the Welfare State?" and the other on "Cancer of the Breast"—will be presented at luncheon sessions.

The principal speaker at the Annual Banquet, on Tuesday evening, will be Mr. Earl Nightingale, one of the best known spokesmen for American conservatism. The banquet program, and the benefit dance for the Woman's Auxiliary Health-Careers Loan Fund that follows it, will be events that physicians and their wives won't want to miss. Tickets can be purchased at the reservation desks.

Be sure to inspect the scientific exhibits; the people who are preparing them have significant and useful information to transmit to you. And don't neglect to make the rounds of the commercial exhibits; the firms that erect and staff them are bearing the expenses of the IMS annual meeting.

Recurrent Urinary-Tract Infections

Recurrent urinary-tract infections are the major urologic problem in childhood, and rank second only to respiratory infections in that age period. From a 10-year study at the Floating Hospital in Boston,* it was hypothesized that recurrent urinary-tract infections are not isolated attacks, but are repetitive exacerbations of one underlying and continuous infection. Although in many cases the symptoms are referable only to the bladder, it was felt that the term *cystitis* should be abandoned because it is difficult to separate infections of the bladder from those of the ureters and kidneys, and the term *recurrent urinary-tract infection* should be substituted for it.

The study at the Floating Hospital consisted of a review of 1,279 patients admitted during the period 1950 to 1960. Of that group of patients, 203 had obstructive uropathy, with anomalies of either the urethra, ureters or ureteropelvic junctures. This obstructive group was made up of 143 boys and 60 girls, and the majority of their cases occurred in infancy or in the first three years.

* De Luca, F. G., Fisher, J. H., and Swenson, O.: Review of urinary-tract infections in infancy and early childhood. *New England J. Med.*, 268:75-77, (Jan. 10) 1963.

Contrary to the findings in most series of urinary-tract infections in children which have been reported, the majority of cases in the Boston study were of the non-obstructive type. Of the total of 1,279 patients with urinary-tract infections, 1,076 were nonobstructive, and principal attention was focused upon the latter.

The patients studied all had had two or more episodes of urinary-tract infection, and they were followed for periods varying from 1 to 10 years. The diagnosis was based on (1) the clinical history; (2) urinalysis and a bacterial count of at least 100,000 colonies per milliliter of urine; and (3) additional studies which consisted of intravenous pyelography and various roentgenologic studies, and cystoscopy.

Upon the patient's admission to the hospital, the offending pathogen was determined by culture of a catheterized specimen of urine, secured by means of an aseptic technic. Subsequent cultures were taken from voided specimens, after careful preparation of the genitalia. Contaminants were separated from clinical infections by the colony count. The usual contaminant had a colony count of less than 100,000 per ml. of urine, and patients with significant infections had colony counts in excess of 100,000. Pyuria was not used as a guide in the diagnosis of urinary-tract infections, for occasionally a significant infection was found in the absence of pyuria. Also, the authors found that leucocytes persisted in the urine for days or weeks after significant infection had subsided.

In contrast to the obstructive group, in which boys predominated, the nonobstructive cases consisted of 834 girls and 242 boys. The infections in this group appeared in infancy or as late as 14 years of age. There was increased incidence through early childhood up to five years, with a peak at three to four years. Eighty per cent of the cases occurred in children between two and five years of age. After seven years of age, the incidence declined sharply.

A surprising finding in the study was a very appreciable delay in the establishment of a diagnosis, and the delay was greatest in the youngest age groups. The average delay, in this group of over 1,000 cases, was 18 months. It was found that in cases occurring during the first year, the most common symptoms consisted of feeding difficulties, or a failure to thrive. Less often, there was a more dramatic clinical picture of fever, vomiting and convulsions. In the age group from one to three, the usual manifestations were fever of unknown origin, a failure to do well, and often a reversion to daytime and nocturnal enuresis. After three years of age, enuresis was present in one-half of the patients, and was accompanied by one or more symptoms such as frequency, dysuria, flank pain, suprapubic pain and vague abdominal discomfort. Fever, as the only symptom, occurred in 25 per cent of the cases.

Escherichia coli was the predominant organism,

and was found in 775 patients or 72 per cent. In 22 patients, the strains of *E. coli* were resistant to all antimicrobial agents. Of the remaining 28 per cent of the cases, *Proteus vulgaris* was found in 12 per cent; *Aerobacter aerogenes* in 6 per cent; *Pseudomonas aeruginosa* in 4 per cent; *Staphylococcus aureus* in 4 per cent; and *Streptococcus faecalis* in 2 per cent.

The 1,076 cases of nonobstructive urinary-tract infection were divided into two distinct therapeutic groups. Group I consisted of 597 patients who were treated with specific antimicrobial agents for variable periods, from three to 30 days. Therapy was repeated for each episode of infection. Group II was made up of 479 children who were given therapeutic courses of specific antimicrobial drugs for five to nine days, followed by long-term maintenance doses of a sulfonamide drug for at least six months. A follow-up study of six months to two years duration gave the authors an opportunity to compare the efficacy of the two methods of management.

In Group I there were 11 recurrent episodes of infection in the average patient. On this regimen, severe renal damage eventually developed in 210 patients, and 11 children had to undergo nephrectomy for extensive unilateral pyelonephritis. There was no measurable renal damage in 309 children in this group during the period of observation, and 78 patients in this group were lost to follow-up.

The results in Group II were gratifying. Of 412 patients given specific antimicrobial agents and ensuing long-term sulfonamide therapy, 372 (90 per cent) were free of infection for six months. Forty children in this group had been treated for at least three episodes of infection before entering the hospital. They were admitted with infections due either to *Ps. aeruginosa*, *P. vulgaris* or *A. aerogenes*. After two years of therapy, 37 of the 40 patients were free of infection. Sixty-seven of the children in Group II were lost to follow-up.

The facts that nonobstructive urinary-tract infection occurs predominately in girls and that the offending organism is usually *E. coli* suggest that the infection is an ascending one, via the urethra. Since improper cleansing of the female perineum increases the chances of contamination and infection, instruction in personal hygiene is very important in the prevention of these infections.

From their experience, the authors emphasize that management of nonobstructive urinary-tract infections requires the same attention that is given to obstructive ones. A specific antimicrobial agent can sterilize the urine in several days and produce clinical improvement, but it is emphasized that the drug should not be discontinued at that point, immediately after the symptoms subside, because infection may persist in the kidney. On the other hand, the drug should not be continued long enough to cause the emergence of resistant strains. The premise upon which long-term sup-

pressive therapy is based is that during an infection and for a variable period afterward, the function of the urinary tract is altered. It is at this time of altered function that reinfection is likely to occur. The control of urinary-tract infection can be assumed only after a long period of observation and of treatment. At the present time, a therapeutic regimen of a specific antimicrobial agent for five to nine days, followed by long-term maintenance doses of a sulfonamide drug, represents the recommended treatment for recurrent urinary-tract infections in childhood.

A Glimpse Into an Ivory Tower

The practicing physician is inclined to think of his colleagues in academic medicine as dreamers in an ivory tower who spend a few hours each week teaching, but devote most of their time to research on some esoteric problem. It would be rewarding to both practitioner and academician if, at intervals, the doctor would return to the so-called ivory tower. He would leave refreshed in spirit, imbued with a greater scientific curiosity and inspired by the enthusiasm and dedication of his academic colleagues. It is even conceivable that he might acquire some pearls of wisdom. The faculty member, on the other hand, would learn something about the problems of the physician which should prove of value in the education of the young doctor.

An opportunity was afforded me, recently, to observe a young research group in the Department of Dermatology at the Stanford University College of Medicine, and it was a stimulating experience. Through the generosity and the unusually wise allocation of funds by the Hartford Foundation, the Department of Dermatology there has been given two successive grants for research in psoriasis. Participating in the project are the dermatologists in the Department and some doctors in the special fields of physiology, biochemistry, pathology and histology who devote full time to the research project. The Department of Pathology also serves in a consultant capacity. The electron microscope, tissue culture, and cellular chemistry broaden the scope of the study. Theirs is not a superficial or circumscribed approach to this chronic and baffling skin disease, but rather is a thorough endeavor by a group of ardent young scientists.

At the present time the Stanford group is undertaking a special investigation of the Koebner phenomenon in an attempt to observe the evolution of the psoriatic lesion and, if possible, to determine the factor or factors which are responsible for the development of the skin lesion. The Koebner phenomenon is an isomorphic reaction or response to minor trauma or injury to the uninvolved skin of the patient with psoriasis. About 14 days after

a needle puncture or mild burn, or after scabies or herpes zoster or some similar skin injury, the psoriatic patient may develop a new lesion at the site of injury to the skin. In rare instances, the Koebner phenomenon is the initial manifestation of the disease.

It is hoped that the directors of the Hartford Foundation and of similar eleemosynary institutions are aware of the seriousness of purpose and the diligent effort of research groups such as the one that is conducting the Stanford study of psoriasis. Every practicing physician should avail himself of the opportunity to familiarize himself with the research projects which are in progress at his *alma mater*, or at his state university if the two happen not to be identical. Such interest and support is likely to be mutually rewarding to the practicing physician and to the academician, and should create better understanding and rapport between the two groups.

Use of the EKG in the Recovery Room

From the Memorial Hospital in New York, Schweizer and Howland* have pointed out the great importance of the electrocardiogram in the recognition of complications in the immediate postoperative period. The study consisted of observations in the recovery room over a 21-month period from October, 1958, to July, 1960. During that period, approximately 10,000 patients passed through the recovery room, and one patient in every 10 (or 1,000 in all) presented some cardiac abnormality which qualified him for the electrocardiographic study. The ages of the patients varied from the first to the ninth decade, and they had been subjected to all forms of anesthesia and to every variety of surgery except cardiovascular and obstetric.

The study was limited to patients with the following abnormalities of rate and rhythm:

1. Those with any type of arrhythmia or disorder of conduction.
2. Those with bradycardia—a pulse below 60 per minute.
3. Those with tachycardia—a pulse over 120 per minute.
4. A fourth miscellaneous group consisting of 126 patients in whom severe heart disease, hypotension or respiratory difficulties had been recognized, or who had received over 10 pints of blood during the course of their operations.

A 12-lead electrocardiogram was taken of every patient in the recovery room who fell into one of the four categories, as soon as possible after the detection of the abnormality. Serial tracings were obtained whenever indicated, and transaminase

* Schweizer, O. and Howland, S.: Value of electrocardiogram in immediate postoperative period. *Surg., Gynec. & Obst.*, 113:33-39, (July) 1961.

determinations, serial hematocrit readings and other chemical studies were done to confirm the electrocardiographic findings.

Of the 1,000 cases studied, 341 showed arrhythmia or disorders of conduction in the immediate postoperative period. In this group, the presence of myocardial disease appeared to be a very significant predisposing factor in the development of postoperative arrhythmia or conduction defects. Sixty per cent of the patients in whom arrhythmia developed for the first time during the postoperative period either had histories of preoperative myocardial disease (48 per cent) or had postoperative evidence of myocardial disease in the absence of clinical histories (12 per cent). If sinus arrhythmia is excluded, there were 194 patients with postoperative disorders of rhythm or conduction, of whom 50 gave histories of preoperative arrhythmia, and 144 had demonstrated no preoperative signs of arrhythmia or of conduction abnormality.

Of the 1,000 postoperative patients, 398 were studied because of bradycardia. In this group there were 283 females and 115 males. This distribution is not surprising, in as much as the recovery room population had a 2 to 1 ratio of females to males. The unusual observation was that bradycardia appeared to be related to the site of operation. Sixty-two per cent of the patients with slow pulses in the postoperative period had had operations on the breast or perineum. The operative site was the only point of uniformity among the patients in this group. There were wide variations in age and physical status. Other factors were the presence of myocardial disease and postoperative complications which involved the respiratory tract and the cardiovascular system.

Postoperative tachycardia qualified 120 patients for electrocardiographic study. In 72 per cent of the patients in this group, according to the authors, the rapid pulse rate was directly attributable to the physical condition of the patient prior to operation, or to complications that occurred during the operation or in the immediate postoperative period. Respiratory complications and hypovolemia were responsible for most of the cases of tachycardia. In 21 per cent of the patients with no apparent reason for an increased pulse rate, the electrocardiogram was interpreted as showing myocardial ischemia or changes consistent with hypovolemia.

The electrocardiographic changes in patients with hypovolemia, due either to a decrease in total blood volume or to plasma deficiency, followed a quite definite pattern. In the majority of cases there was a depression of the ST segment and a lowering or flattening of the T wave, frequently associated with low voltage of the QRS complex.

In the special group of 126 in whom complica-

tions occurred, definitive electrocardiographic correlation was found in 25 patients: in six of 66 patients with hypotension in the operative or postoperative period; in one of five patients with massive blood replacement; in all three patients with induced hypotension during anesthesia; in five of 16 patients with respiratory distress during the operation or postoperatively; in five of 21 patients with known preoperative myocardial disease; and in five of 15 patients with miscellaneous complications.

In addition to the above groups, the postoperative electrocardiogram was instrumental in the discovery of 11 cases of acute myocardial infarction and two cases of metastatic disease of the heart, unsuspected prior to the operation. Only five of the 11 patients with myocardial infarction had histories of cardiovascular disease, and of those five, only two had been known to have coronary heart disease. Tachycardia of sudden onset occurred in five patients during operation. Other manifestations included unexplained hypotension, arrhythmia, bradycardia and cyanosis. Only one patient complained of upper-abdominal pain associated with hypotension, following an operation on the head and neck. The authors emphasized that coronary occlusion can occur in the postoperative period without the characteristic pain syndrome, and, in fact, without any sign of cardiac difficulty. The use of narcotics and the clouded consciousness in the immediate postoperative period frequently result in a failure to diagnose acute infarction promptly.

As a result of this study, it became clear that the electrocardiogram is valuable in the early detection of acute myocardial infarction and in the differential diagnosis of difficult problems in the postoperative period. A tracing, the authors say, is particularly indicated in the following conditions.

1. A sudden onset of tachycardia, with or without hypotension, during or after operation.
2. Unexplained hypotension which does not respond to the restoration of fluid volume.
3. Marked bradycardia or arrhythmia suggestive of multiple premature ventricular contractions or auricular fibrillation.
4. Unexplained cyanosis appearing in the operating room or in the recovery room.

The authors concluded their study as follows: "Bradycardia and arrhythmia developing in the immediate postoperative period are usually regarded as fairly benign manifestations without much clinical significance. On the contrary, the present study indicates that the occurrence of these abnormalities of rate and rhythm after operation may indicate the presence of previously unsuspected myocardial disease. In the majority of patients, a pulse above 120 per minute represents a serious medical or physiologic problem which requires prompt attention."

Steroid Treatment of Asthmatic Cripples

Despite the hazards that accompany the administration of the corticosteroids over extended periods of time, Tuft* has reported remarkably beneficial effects of these drugs in restoring "asthmatic cripples" to useful lives. In his extensive experience, the Philadelphia allergist has indicated, the results in these difficult patients have more than compensated for possible harmful effects of these drugs. Steroid therapy was employed only as a last resort—never as the first choice of therapy—and was employed as a supplement to other drugs, and not as the sole therapeutic agent.

The cases reported were all patients whom Tuft saw in private practice, and who were under his close personal supervision. All were chronic asthmatics who had failed to respond to the methods of treatment employed in all similar patients. Each patient had a thorough diagnostic study which included a complete and detailed history, physical examination, fluoroscopy of the chest, and complete allergy studies. The allergy studies included intracutaneous skin tests, mucosal tests and diet trial. Treatment was instituted following the diagnostic studies and consisted of the elimination or the avoidance of test-positive antigens from the diet and from the environment of the patient. Whenever necessary, hyposensitization was carried out with extracts of those of the offending allergens which could not be eliminated or avoided. Allergy treatment was supplemented by whatever drugs were necessary to bring about symptomatic relief. When it was found that all these measures had failed, that the patient was getting worse instead of better, and that on occasion he was in imminent danger of developing status asthmaticus, corticosteroids were resorted to.

The general plan of steroid therapy consisted of a large initial dose—two to three times the average dose, depending upon the severity of the asthma at the time treatment was started. On occasion the dose was repeated a second time, but in the majority of patients the usual dose of corticoid was given every four hours during the waking period for 24 to 48 hours, or until marked improvement had occurred. The dose was then gradually reduced. First it was given three times a day for several days, and then twice a day until the patient was symptom-free. If improvement continued for two to three weeks, the dose of the drug was gradually reduced until the patient could get along without it or until a maintenance dose was reached. The maintenance dose was considered to be the amount of the drug which was sufficient to keep the patient either free of asthma or to reduce his asthma to a minimum which

could be controlled by the remedies usually given for symptomatic relief.

The preparation used depended upon the time when the treatment was started. Prior to 1958, patients were started on cortisone or hydrocortisone, and then prednisone and prednisolone were employed. Since 1958, most of the patients have been given triamcinolone. If it was found that triamcinolone induced unpleasant side-effects, or if it proved ineffective, then one of the newer corticoids was administered. If triamcinolone was chosen, 8 mg. was given initially, and then 4 mg. was given four times a day until satisfactory results were obtained. This dose was gradually reduced, as soon as possible, until the minimum amount required to keep the patient comfortable, the maintenance dose, was reached. The maintenance dose usually consisted of 2 to 4 mg. daily, given in 2 doses at 12-hour intervals. However, the maintenance dose was not kept fixed.

Arbitrarily, it was decided that one year of continuous corticoid therapy would constitute long-term treatment. The author reported his results in 25 patients who had been given this long-term corticoid therapy. Fifteen of the patients were women and 10 were men, and their ages varied from 23 to 70 years. Eight of these patients have taken the corticoids for 8 to 9½ years, with marked beneficial results and with a minimum of side-effects. According to the author, the clinical effect was good in all patients to whom corticoids were given. Nine of the group had been complete "asthmatic cripples" prior to therapy, and all have been able to resume their normal duties. In addition to the 25 patients on continuous therapy, an additional eight adults took corticoids intermittently over periods up to eight years.

Although children constitute nearly one-half of Dr. Tuft's practice, only six children required long-term therapy. Serious side-effects occurred much more commonly in children than in adults, but one child was started on prednisone at 2½ years of age and received 2.5 to 5.0 mg. daily for three years, and then triamcinolone for 30 months. This child had no status asthmaticus or recurrent pneumonitis for about two years and only a minimum of asthma. There were no side-effects, and there was no interference with the growth of the child.

Since 1958, most of the patients have been given the newer corticoids, especially triamcinolone, and the side-effects have been quite mild compared with those observed with the earlier steroids. Most of the patients have shown little or no changes in weight. Hirsutism and moon-face phenomena have not been major problems in patients taking triamcinolone. No psychiatric problems have occurred. Seven patients have experienced ecchymoses after the slightest trauma, but there have been no serious side-effects such as peptic ulcer, diabetes or osteoporosis.

In conclusion Tuft stated: "I cannot emphasize

* Tuft, L.: Long-term corticosteroid therapy in chronic asthmatic patient. *Am. J. Med. Sciences*, 244:686-694, (Dec.) 1962.

too strongly the fact that corticoids should be used in the intractable asthmatic as a last resort and not initially . . . corticoid therapy is at best a stop gap method. . . Results show that long-term corticoids, properly administered, can be invaluable adjuncts in the treatment of chronic intractable asthma."

"See You in Atlantic City"

BY GEORGE M. FISTER, M.D.

President, American Medical Association

The American Medical Association will hold its 112th annual meeting June 16-20 at Atlantic City. In urging you to attend, I would like to write briefly about an aspect of science that is rapidly becoming a very serious problem. I refer to what scientists have called "The Publication Explosion."

Research men are faced with the dictum of "publish or perish." Naturally, they publish. They publish so much that some areas of science now have such a volume of literature that it is often cheaper and faster to repeat an experiment than to search the literature and find out what others have done in the same field.

It has been said that it would be necessary for a physician to read one book an hour just to keep up with new findings in his own specialty. This obviously is impossible.

There were four million scientific documents published in 1962. These included some three million papers and articles in some seventy thousand technical and professional journals. The bulk of these are in the life sciences, particularly medicine. They are published in at least 65 different languages, in almost every country of consequence in the world.

Faced with this overwhelming deluge of paper, the physician in practice, already one of the busiest men in his community, may be inclined to just throw up his hands.

The scientific meeting helps greatly to fill the gap and to help the physician keep abreast of new developments. At the AMA annual meeting, in a short space of four or five days the physician has his choice of literally hundreds of scientific papers covering the broad spectrum of medicine. He can select half a dozen lectures daily from the program as a whole. Or he can concentrate on his specialty section and its meetings.

The physician can select outstanding medical motion pictures, fresh from the production line. Or he can view live telecasts of surgery and medicine in action in new areas.

It would take years of reading an hour a day to learn all that can be learned in five days at the annual meeting of the American Medical Association. The scientific exhibits alone are a good post-graduate course in medicine.

All of us as physicians are well aware of the problems of keeping abreast, of bringing the findings of the researchers into our practice as soon as possible. Through the annual meeting of our national association, we can make considerable progress in this important respect.

As president of the American Medical Association, I personally urge every American physician to make plans now to attend this annual meeting June 16-20 in Atlantic City.

The Dangers of "Making Weight"

The practice of placing high school and college boxers and wrestlers on starvation diets so they can "make weight" for a particular event has been strongly criticized by two national associations.

By reducing to a certain weight, an athlete may compete in a class below that in which he rightfully belongs.

Such dieting can be hazardous to health, the American Medical Association's Committee on the Medical Aspects of Sports and the National Federation of State High School Athletic Associations said in a joint statement.

"It has been demonstrated by experience and shown experimentally that strength and stamina are markedly reduced by such practices," they said.

The system of requiring weighing in before each contest, still common in wrestling and boxing, encourages an intense effort to lose weight before the weighing-in ceremony, followed by a quick reversal to regain as much weight as possible prior to the contest, they said. However, they said, the food eaten between the weigh-in and the match cannot be metabolized in time to contribute appreciably to the restoration of energy reserves.

"At one wrestling tournament in a conference where the practice of 'making weight' is general, two competitors collapsed before they had even participated in a match," according to the statement.

The two associations urged each state high school association to work out some procedure to take the emphasis off of "making weight." Several sensible approaches have been offered, they said. One would have all athletes weighed on an unannounced day before the season. A percentage allowance would be made for additional weight gain during the season, and the competitors then assigned to weight classes in which they would remain throughout the season.

The two groups also termed the practice of making weight "ethically indefensible," adding: "Circumventing regulations designed to insure equitable competition through such a device is certainly inconsistent with the spirit of sports."

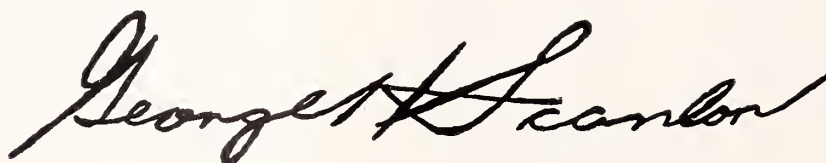
President's Page

Let me take this opportunity to thank you—the members of the Iowa Medical Society—for permitting me to serve you over the years on the Committee on Medical Education and Hospitals, in managing the Educational Loan Fund, on the Board of Trustees, and as president-elect and president.

Of course I can't say that my duties on behalf of organized medicine have been invariably pleasurable, but they certainly have been satisfying, for my own ideas and attitudes coincide with the policies and objectives that are advocated by a great majority of Iowa doctors, and I think that my fellow officers and I have made some worthwhile accomplishments.

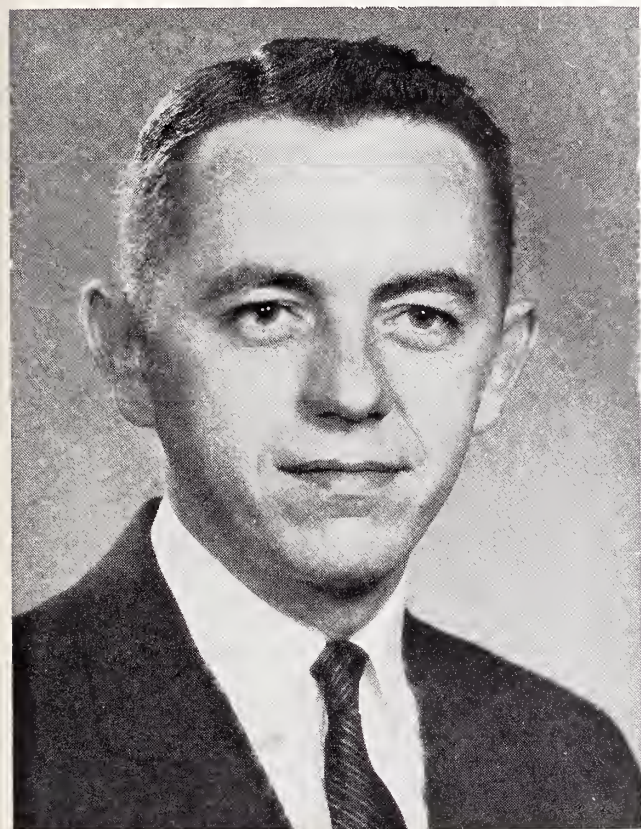
I am especially appreciative of the opportunities that IMS activities have given me to strengthen my acquaintanceships with a great many fine men and women both in and outside of medicine. Among those people, I want particularly to mention the members of the State Society's staff.

I hope you will not interpret these few sentences as a "Hail and Farewell," for I shall continue to be deeply interested in the Iowa Medical Society, and shall be glad to assist it in any way that I can.

A handwritten signature in cursive script, reading "George H. Scanlon". The signature is fluid and elegant, with a large initial "G" and a stylized "H".

President

S.U.I. Faculty Member Named Markle Scholar



Dr. James L. Spratt, an assistant professor of pharmacology at the State University College of Medicine, has been appointed a Markle Scholar in Academic Medicine. The honor was announced by the board of directors of the John and Mary R. Markle Foundation at a dinner in New York, on March 5. Dr. Spratt's appointment provides a \$30,000 grant to the medical school over the next 5 years to supplement his salary, aid his research, and assist in his development as a teacher and investigator.

Thirty-one-year-old Dr. Spratt joined the S.U.I. staff in 1961, after receiving B.A., Ph.D. and M.D. degrees from the University of Chicago. A scholarship award winner in college, graduate school and medical school, he recently was granted a Research Career Development Award from the United States Public Health Service. His research studies, supported by a National Institutes of Health research grant, are aimed toward understanding the pharmacologic and therapeutic actions of drugs on the heart.

Dr. Spratt is the fourth S.U.I. faculty member to receive a Markle Award. Other appointees as Markle Scholars in Academic Medicine have been Dr. Daniel Stone, an associate professor of internal medicine, 1960; Dr. Robert E. Carter, an associate professor of pediatrics and assistant dean, 1957; and Dr. Jack Davis, a former assistant professor of anatomy, 1953.

Greetings From Dean Hardin

It is a pleasure and an honor to greet members of the Iowa State Medical Society personally and on behalf of the faculty and students of the College of Medicine. This issue of the *JOURNAL*, like similar ones in years past, is evidence of the close cooperation existing between the Society and the College and the respect each has for the other. That this should exist between medical school and practicing physician is not surprising. For over 2,000 years the physician-teacher has been a practitioner of medicine and the practicing physician a teacher.

Apprenticeship training—"reading" with an established physician—disappeared from Iowa approximately a century ago. Then, like the rest of the world, we came to establish a more formal medical curriculum, and entrusted it to a college faculty. Bioscientists in disciplines related to medicine—in fact its basic fabric—joined with physicians in the teaching and other work of this faculty. The College of Medicine became an entity with recognized duties: to give a basic medical education to new physicians; to care for patients in its teaching hospitals; to find new knowledge related to medicine and to improve methods of treatment.

The medical curriculum has become quite formal in comparison to that of days gone by, yet medical teaching retains much of the old apprentice system. The art of medicine is learned at the bedside. Here, too, are formed habits of thinking so essential to proper diagnosis and patient care. Third- and fourth-year students now spend 90 per cent of their time studying patients and correspondingly less in class-room exercises.

The role of the physician-teacher who is a member of the faculty is quite clear. He guides and supervises the student's learning in his college years. But what is the role of the practicing physician? How does he discharge his obligation to teach? He does so by helping younger colleagues in a kind of "on the job training" as they establish themselves in practice. He may enter into the preceptorship program of the State Society and the College of Medicine. At this particular time it is essential to medicine that internship programs existing in community hospitals in Iowa be strengthened and that physicians be trained in them for medical service to communities. The teaching in these programs should be done mainly by practicing physicians. We must all regard medical education as a continuum in which the student spends his first years in the formal program in a college, and gradually progresses to full assumption of responsibility for patient care. We must recognize that each medical institution, including the community hospital, has a role to play in the training of new physicians, and we must all continue to support each other in the various parts of our total educational program.

Thus may the teacher-practitioner of the faculty and the practitioner-teacher of the community join in a common program of medical education.

Supplemental Report of the IMS Policy-Evaluation Committee

At the Annual Meeting of the Iowa Medical Society in May, 1962, the House of Delegates authorized the Policy-Evaluation Committee to continue its study of the Blue Shield Blue Chip program.

The Committee and a special subcommittee have devoted a year of intensive review to the Blue Chip plan. However, recognizing the importance of one Blue Shield plan to another, and keeping in mind the purpose for which the Policy-Evaluation Committee was created, the committee members thought it appropriate to direct attention to all existing Blue Shield plans, with special emphasis on Blue Chip.

The Committee believes its research of the "usual, customary fee" program is complete, and it also has some comments to offer as to the other plans. Publication of its findings in the April JOURNAL OF THE IOWA MEDICAL SOCIETY enables the entire membership of the Society to share the information that it has accumulated.

In this report, the Policy-Evaluation Committee is asking the House of Delegates to provide an opportunity for the full membership to study the various alternatives and suggestions that it has developed, and it is requesting that final action be deferred until the 1964 Annual Meeting.

If the House of Delegates accepts its recommendation that the membership be given a year to consider its findings, then it hopes that the members of the House will discuss the facts contained in this report with their county constituents, and in addition that special meetings will be arranged at the county and/or district level for the purpose of discussing all aspects of Blue Shield. A 12-month period should be ample for all members to offer their comments.

It is requested that these opinions be channeled through this Committee, so that it may have the benefit of the members' thinking when its final report is assembled for presentation to the House of Delegates next year. The Committee solicits comments from participating physicians, but it also urges non-participating physicians to respond. The non-participating physicians are asked to make a special effort to convey their thoughts.

When Blue Shield was formed by the Medical Society, it was hoped that all members would become participating physicians. Therefore, one of the primary concerns of the Policy Evaluation Committee is to assist Blue Shield in perfecting plans that will be acceptable to a maximum number of IMS members.

A primary objective of this Committee's report is to apprise the membership of important facts relating to the Blue Chip program, so that physicians can knowledgeably offer their comments on the alternatives which it proposes.

BLUE CHIP

Last August, a special subcommittee of the parent Committee was appointed to explore all aspects of the Blue Chip plan. The chairman of that subcommittee was Dr. Herman J. Smith, of Des Moines, and the other members were Drs. Henning W. Mathiasen, of Council Bluffs, and S. P. Leinbach, of Belmond.

After extensive study from every point of view—including numerous conferences, at which Blue Shield officials, physicians who were disgruntled with the Blue Chip plan, and state insurance officials were present—the subcommittee finally concluded that the problems having to do with Blue Chip stem from a misunderstanding of Blue Chip contract language, specifically in the following paragraphs:

(Paragraph No. 9)

"... the doctors of medicine participating by agreement with Iowa Medical Service will accept as payment in full, within the terms of this contract, the allowances as determined by Iowa Medical Service as being the charges for customary, reasonable, and usual demands for payment of professional services for which benefits are available under this contract.

"A charge will be deemed customary, reasonable and usual if it does not exceed the general level of charges by others who render such services under similar or comparable circumstances within the community in which such charge is incurred."

When development of a Blue Chip plan was authorized by the House of Delegates in 1957, physicians were given the impression that this new plan would pay their "usual, equitable fee (with a reasonable maximum benefit)." Subsequently, however, when the Blue Chip plan was presented to the Iowa Insurance Commissioner for ratification, he required the inclusion of some more restrictive language. It appears that many of the present-day problems with Blue Chip result from the membership's not being informed of these limitations. As a matter of fact, it was not until a number of complaints had been received that the Society became aware of the Insurance Commissioner's rulings. The items about which there have been disagreement involve (1) the language in the previously quoted paragraphs from the Blue Chip contract, which include the terms "by others" and "within the community," and (2) the use of a \$5.00 unit for screening Blue Chip claims.

At one of the Committee's meetings, a representative of the Iowa Insurance Department stated that the Iowa Insurance Commissioner would not approve an "open-end" contract, wherein benefits were not defined, and which permitted an individual physician to specify *his own* "usual, customary

and reasonable" fee. He also said that the Commissioner had approved a rate for the Blue Chip program, using as a guide a \$5.00 coefficient when applied to the Iowa Unit Fee Index.

It is because of this latter ruling that Blue Shield has used a \$5.00 unit as the basis for screening Blue Chip claims.

Blue Shield officials report that there are approximately 30 physicians whom they consider to be "chronic offenders"—physicians who repeatedly submit charges in excess of the amount allowable when computed on the basis of the criteria for payment of Blue Shield claims.

It is the opinion of this Committee that under existing circumstances, participating physicians have no choice other than to accept the Blue Chip plan just as it is now being administered—i.e., in accordance with requirements laid down by the Iowa Insurance Commissioner. However, the Committee is hopeful that during the coming year, if the House of Delegates grants the requested extension of time for additional study of the Blue Chip plan, the Medical Society and Blue Shield officials can confer with the Insurance Commissioner, and perhaps can alter or eliminate the objectionable contract language.

It is hoped that the House of Delegates will wait until 1964 before making a choice among the following alternatives, although it is conceivable that it may want to establish an interim position in 1963:

1. Accept the present Blue Chip contract, and the Insurance Commissioner's interpretations of its provisions.
2. Recommend modification of the Blue Chip contract language to permit participating physicians to be compensated for services on the basis of their own "usual, equitable fees (with a reasonable maximum benefit)."
3. Recommend that the Blue Chip plan be withdrawn.
4. Create a high-level service income plan to replace the Blue Chip plan, with an appropriate coefficient when applied to the latest edition of the Iowa Relative Value Index (Green Book).

**B300G AND B450 CONTRACTS
FEDERAL EMPLOYEE AND NATIONAL ACCOUNTS**

High-level—B450—\$6,000 service income—family (\$4.50 per unit, Iowa Unit Fee Index, Gray Book)
Low-Level—B300G—\$4,000 service income—family (\$3.00 per unit, Iowa Unit Fee Index, Gray Book)

Considerations

1. Should the existing B400 middle-income contract be replaced with the B450?

	Single	Two-Person	Family	Per Unit (Gray Book)
B450	\$4,000	none	\$6,000	\$4.50
B400	3,600	\$4,500	5,400	4.00
	Net Worth	Net Worth	Net Worth	
	\$36,000	\$45,000	\$54,000	

2. Should the existing B300 contract be replaced by the B300G contract?

	Single	Two-Person	Family	Per Unit (Gray Book)
B300G	\$2,800	none	\$4,000	\$3.00
				Per Unit (Red Book)
B300	2,400	\$3,000	3,600	3.00

SENIOR 65 PLAN

Service Income Levels—\$2,000 single; \$3,000 two-person—net worth limits of \$20,000 and \$30,000

Considerations

1. Should this Senior 65 plan that has been in existence since 1959 be replaced by the new Senior Citizens Plan which was offered for the first time in Iowa last fall as a part of a national program (service income levels of \$2,500 and \$4,000)? The latter plan does not include a net worth provision. It is the recommendation of the Policy-Evaluation Committee that if the House of Delegates wishes to modify the old plan to conform more nearly with the new one, its net worth provisions should be maintained, and it should be moved into the Iowa Relative Value Index (Green Book).

A250 CONTRACT

The Policy-Evaluation Committee continues to recommend that this plan be removed from the market as rapidly as possible.

The Committee is informed that Blue Shield is in the process of developing a major-illness policy, and it wishes to encourage Blue Shield in this undertaking. It hopes this coverage will be available in Iowa in the very near future.

At its meeting on August 16, 1962, the Committee recommended that Blue Shield convert all of its plans into the most recent edition of the Iowa Relative Value Index (Green Book) as rapidly as possible. At its March 19, 1963, meeting, the Committee reiterated that recommendation.

CONCLUSION

The Committee wishes to conclude this report by reminding IMS members that Blue Shield has become an important factor in all our practices, and that we owe it to ourselves and to our patients to keep informed about its affairs and to take an active interest in them.

The Committee members hope you will feel a sense of obligation to transmit your thoughts to it, so that it can benefit from them as it continues its deliberations in preparation for 1964.

W. L. DOWNING, M.D., *Chairman*
O. N. GLESNE, M.D.
C. V. EDWARDS, SR., M.D.
S. P. LEINBACH, M.D.
H. W. MATHIASSEN, M.D.
H. J. SMITH, M.D.
J. K. MACGREGOR, M.D.
C. W. SEIBERT, M.D.
L. F. HILL, M.D.
W. K. HICKS, M.D.
G. M. WYATT, M.D.
G. H. SCANLON, M.D.

THE JOURNAL *Book Shelf*



BOOK REVIEWS

DRUGS IN CURRENT USE, 1963, ed. by *Walter Modell*, M.D. (New York, Springer Publishing Company, Inc., 1962. \$2.50).

This is a paper-back listing of drugs in current use, with very brief comments on forms, action, use and dosage, and special warnings when necessary. There are cross-index notations regarding items listed under their trade names. The usefulness of the volume will be limited to quick reference.

The format is simple and the type is attractive, but in the reviewer's copy some 34 pages were missing.—*M. E. Alberts*, M.D.

MEMOIRS OF A MEDICO, by *E. Martinez Alonso*, M.D. (New York, Doubleday & Co., Inc., 1961. \$4.50).

The autobiography of Dr. Alonso encompasses a fascinating period in the history of Spain. Dr. Alonso was brought up, the son of a diplomat, in Vigo, Spain, before the Spanish Revolution. He took his medical training in Glasgow, and returned home in time to be befriended by the last Queen of Spain, and to be catapulted into the great Spanish Civil War. For any one who lived in or visited Spain in those days, his stories will have a special cogency. Most of World War II, he spent in London, and following this, he became house doctor at the Conrad Hilton Hotel in Madrid.

Certain doctors feel called upon to write their memoirs, and most of them are good story-tellers. Dr. Alonso is no exception, for his autobiography reads easily, is not heavy, and is filled with anecdotes not only of a medical nature, but of life in Glasgow and life in Spain. There are stories of bull-fighters, and stories of wars. The messages are two: (1) regarding the possibility of living a life of adventure in this modern-day world, and (2) of the background and experiences of the Spanish people during the past three decades. For the latter reason alone, the book would be worthwhile, for Americans know little or nothing of the trials and tribulations and of the experiences of the Spanish people during those troublesome years.—*Daniel A. Glomset*, M.D.

OFFICE PROCEDURES, SECOND EDITION, by *Paul Williamson*, M.D. (Philadelphia, W. B. Saunders Company, 1962. \$13.50).

This book consists of 440 pages of briefly-discussed "office" procedures, many of which may be controversial. The author seems to look upon the present-day trained physician as something different from a doc-

tor. Could he be right in contending, with medical standards as they are (including medico-legal considerations), that "Whether or not you like it, you are going to practice about 20 per cent science and about 80 per cent *witchcraft*"?

This book will be praised by some and condemned by others. I am sure the individual reader's impression will be dependent on his endeavor in medicine, as well as on the environment of his practice.—*M. E. Alberts*, M.D.

ATLAS OF HISTOPATHOLOGY OF THE SKIN, SECOND EDITION, by *G. H. Percival*, M.D., *George L. Montgomery*, M.D., and *T. C. Dodds*. (Baltimore, The Williams & Wilkins Company, exclusive U. S. agents, \$24.50).

In their preface, the authors say: "The purpose of this work is to provide the postgraduate student in dermatology and pathology with a pictorial representation of the microscopic changes found in diseases of the skin." This they have done well. Accordingly, this ATLAS is recommended to pathologists, dermatologists and residents in both of those fields.

To those who are unfamiliar with this ATLAS, I might point out that the authors are, respectively, a dermatologist, a pathologist and a specialist in medical photography. Since pathologists and dermatologists frequently use different systems of nomenclature, the text contains many synonyms.

There are 525 color photomicrographs, and the reproductions are generally excellent. In some, however, the resolution is only fair. The hematoxylin and eosin-stained preparations are more heavily eosinophilic than I like, but in making this comment I am expressing no more than a personal preference. The photomicrographs of special stain preparations are almost all excellent. A brief yet adequate test accompanies the photomicrographs.—*David Baridon, Jr.*, M.D.

RESISTANCE OF BACTERIA TO THE PENICILLINS (Ciba Foundation Study Group No. 13), ed. by *A. V. S. de Reuck*, M.Sc., and *Margaret P. Cameron*, M.A. (Boston, Little, Brown and Company, 1962. \$2.95).

The papers contained in this small volume were presented at a symposium in London on February 2, 1962, in honor of Sir Charles Harrington, director of the National Institute for Medical Research (British), 1942-1962. The papers developed a discussion concerning the action of the penicillins, the different types of resistance to penicillin, the characteristics of penicillinase and the resistance of coagulase-positive staphylococci to benzyl penicillin, methicillin and other penicillins.

The discussions are of more interest to the researcher than to the practicing clinician. Much of the material consists of laboratory data and its interpretation, but there are some references to clinical application. This volume would be of most interest to the clinical bacteriologist or researcher.—*M. E. Alberts, M.D.*

ERYTHROPOIESIS, ed. by *Leon O. Jacobson, M.D.*, and *Margot Doyle, Ph.D.* (New York, Grune & Stratton, Inc., 1962. \$6.75).

This volume is a collection of papers by investigators. Erythropoietin is a substance that hasn't yet been purified, but it can be assayed in animals and in bone-marrow cultures. It may be more than one substance, a part of it being, probably, a glycoprotein, another part probably a lipid, and other parts as yet not even tentatively identified. Organs other than the kidneys are known sites of its formaton. Its mode of action is on bone-marrow stem cells, and perhaps in increasing the rate of maturation of red blood cell precursors.

Investigators have used all known technics in studying the kinetics of erythrocyte production. Radioactive iron uptake by red blood cells and some of the older technics such as reticulocyte counts and marrow morphology are utilized.

The book is intended primarily for researchers operating very dignified laboratories in this field, and the clinician finds the material somewhat ill-adapted to his needs. Nevertheless, there are a few sections that are clinically interesting. One of them describes iron-absorption studies both independent of and dependent upon erythropoietin. One by Frank H. Gardner describes an approach to treatment of various refractory anemias, marrow aplasias and hemolytic states through the use of cobalt, corticosteroids and androgens.—*Thomas D. Ghrist, M.D.*

BOOKS RECEIVED

YOUR WEIGHT AND HOW TO CONTROL IT (REVISED EDITION), by *Morris Fishbein, M.D.* (Garden City, New York, Doubleday & Company, Inc., 1963. \$3.95).

CURRENT THERAPY 1963, ed. by *Howard F. Conn, M.D.* (Philadelphia, W. B. Saunders Company, 1963. \$12.50).

THE FAT BOY GOES POLY-UNSATURATED, by *Elmer Wheeler*. (Garden City, New York, Doubleday & Company, Inc., 1963. \$3.50).

PHYSIOLOGY OF THE CIRCULATION IN HUMAN LIMBS IN HEALTH AND DISEASE, by *John T. Shepherd, M.D.* (Philadelphia, W. B. Saunders Company, 1963. \$12.00).

MY CASE FOR FREEDOM, by *David A. Freed, M.D.*, (San Antonio, The Naylor Company, 1962. \$3.50).

SURGERY, by *Richard Warren, M.D.* (Philadelphia, W. B. Saunders Company, 1963. \$19.50).

PROTEIN METABOLISM: INFLUENCE OF GROWTH HORMONE, ANABOLIC STEROIDS AND NUTRITION IN HEALTH AND DISEASE (An international symposium sponsored by CIBA). (Berlin, Gottingen, Heidelberg, Springer-Verlag, 1962).

General Practitioners' Seminar to Be Held at MHI, Independence

The third annual General Practitioners' Seminar will be held at the Mental Health Institute at Independence, on two consecutive Thursdays, April 25 and May 2. Selig M. Korson, M.D., superintendent, will preside at the two-day seminar which is sponsored by the Institute and the Iowa Chapter of the American Academy of General Practice. Six hours of Category I credit will be allowed. The following topics and speakers have been scheduled:

Thursday, April 25

2:00-3:30 p.m. "Management of the Disturbed Child"
Milford E. Barnes, M.D., Director of the Des Moines Child Guidance Clinic

3:30-5:00 p.m. "Marriage Counseling"
Max E. Pepernik, M.D., Assistant Professor of Psychiatry, State University of Iowa

Thursday, May 2

2:00-3:30 p.m. "Treatment of Depression"
A. S. Norris, M.D., Associate Professor of Psychiatry, State University of Iowa

3:30-5:00 p.m. "The Role of the General Practitioner in Providing Psychiatric Services"
Paul E. Huston, M.D., Director of the State Psychopathic Hospital and Professor and Head of Psychiatry, State University of Iowa

W. B. SAUNDERS COMPANY features the following new editions in their full page advertisement appearing elsewhere in this issue:

REED—COUNSELING IN MEDICAL GENETICS

An up-to-date book telling you exactly what you want to know about the chances of a hereditary disability being passed from parent to child.

NADAS—PEDIATRIC CARDIOLOGY

A practical text covering the entire field of heart disease in children.

HINSHAW and GARLAND—DISEASES OF THE CHEST

A useful book unsurpassed for vividness of illustration and completeness of coverage.



Iowa Chapter of the American Academy of General Practice

Northwest Iowa Postgraduate Conference

May 16, 1963

Because of the bad weather in March, 1962, it was necessary to postpone the Northwest Postgraduate Conference scheduled to be held in Sioux City. The Iowa Chapter of the American Academy of General Practice regretted very much that it was necessary to postpone that planned conference at the last moment, and therefore immediately set about to make plans for a 1963 conference in Sioux City. The date, Thursday, May 16, was selected. (This should eliminate the likelihood of blizzards and blocked highways, and we trust that the heavens will be kind—so no floods will be encountered.) The meeting is to be held at the Sheraton-Warrior Motor Inn, because of the remodeling of the Sheraton-Martin Hotel.

The broad scope of the subject matter to be presented and the prominence of the men who are to speak are certain to attract you. Registration will begin at 9:00 a.m. and continue all day. The speakers and their subjects are:

Manuel E. Lichtenstein, M.D., Chicago, "Surgery of the Bowel"; Loran Pilling, M.D., Mayo Clinic, Rochester, "Behavior Problems in Children"; John W. Walsh, M.D., Washington, D. C., "Prenatal Complaints"; Harry M. Robinson, Jr., M.D., University of Maryland, "Toxic Eruptions."

The luncheon is for all physicians and their wives. The speaker will be Dr. Robert L. VanCitter, of the Department of Physiology and Biophysics of the University of Washington School of Medicine. His topic will be "A Look at Medicine in the U.S.S.R." Dr. VanCitter has recently returned from a three-month visit to the U.S.S.R., during which time he traveled alone, visiting and working in hospitals, research facilities and medical schools. Conceptual and ideological differences did not constitute a serious barrier to exchange of medical thought, and he found the individual Russian professional person extremely cordial and very much interested in America. This should be a really authoritative description of medicine in the U.S.S.R.

The presentation of this Northwest Iowa Postgraduate Conference is made possible with a grant from and with the cooperation of the Education Division of Lederle Laboratories. There will be no fee for registration, for the luncheon, or for the reception that will follow the close of the lectures. Five hours Category I credit will be allowed Academy members.

Seminar in Psychiatry

The Iowa Chapter of the AAGP will join with the Mental Health Institute at Independence in co-sponsoring a two-part Seminar in Psychiatry for General Practitioners at the Independence hospital. The first program is to be presented on the afternoon of Thursday, April 25, and the second one on Thursday afternoon, May 2.

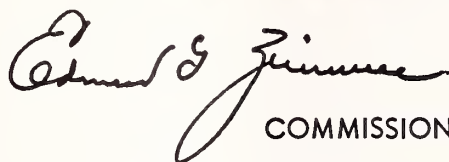
On April 25 Dr. Milford E. Barnes will discuss "Management of the Disturbed Child" and Dr. Max E. Pepernik will discuss "Marriage Counseling." On May 2, Dr. A. S. Norris will discuss "Treatment of Depression," and Dr. Paul E. Huston will discuss "The Role of the General Practitioner in Providing Psychiatric Services." Each afternoon's program will be acceptable for three hours of Category I credit to members of the Academy, or a total of six hours for the two afternoon programs.

**THE IOWA CHAPTER OF AAGP
will maintain a**

**HOSPITALITY ROOM FOR
MEMBERS AND GUESTS**

**at the Fort Des Moines Hotel during
the IMS annual meeting. Watch for the
placard that will announce the room
number.**

STATE DEPARTMENT OF HEALTH



COMMISSIONER

Typhoid Immunization Following Floods

During the past few weeks, many Iowans undoubtedly have asked themselves, "If a flood threatens our area, should we, our neighbors and our entire community have typhoid immunizations?"

The amount of typhoid fever in Iowa has been decreasing constantly. Last year, as a result of follow-up of every reported case of possible typhoid fever, only two cases were actually confirmed as typhoid. In addition, two elderly persons were found to be typhoid carriers. It has been more than 25 years since Iowans were last advised to include typhoid fever as one of their regular or basic immunizations. Our state and surrounding states depend upon community sanitation to do a major part of the work of reducing the incidence of typhoid fever. It, along with follow-up of all known patients to learn whether or not they become carriers, and with supervision of all known carriers, completes the general typhoid prevention program. At present, under normal conditions in Iowa, typhoid immunization is advocated only for such people as hospital attendants, those traveling abroad, and certain groups of campers.

Should a town or an area of the state be subjected to flood waters, there can be no necessity for every person in the area to receive typhoid immunization. Such prophylaxis should be reserved for persons who actually have been exposed to the flood waters themselves or to objects contaminated by them. Such groups as sandbag fillers, levee workers, repair crews working in the flood area, and family members going back into the flooded homes to clean them out before they are reoccupied—these are the people who should be protected by typhoid vaccine.

There can be no reason to inoculate people living in unflooded areas, whose homes and water supplies are not contaminated and who have no occasion to enter the flooded areas. Should a city water supply become contaminated, such contamination would be the factor that would expose the greatest number of people to the dangers of typhoid fever. Such a catastrophe would suggest wide-scale typhoid immunization, even though all users of the water had been warned to boil it until it was again pronounced safe.

Typhoid vaccine may be obtained by calling or writing the Iowa State Department of Health, Division of Preventable Diseases. The telephone number is 515-288-7111, Extension 429.

Misunderstood Characteristics of the Elderly

Many manifestations of aging, previously considered to result from the aging process itself, may be attributed to other causes, Public Health Service investigators have found.

Collaborative studies by a team of twenty-one scientists at the National Institute of Mental Health, National Institutes of Health, Bethesda, Maryland, indicate that social, personality, and health variables all appear to be of considerable importance in explaining changes that occur in older persons.

The findings are reported by Dr. Robert N. Butler in the March, 1963, issue of the *AMERICAN JOURNAL OF PSYCHIATRY*. The studies were designed to explore the effects of normal aging. The studies involved 47 medically healthy males, living in urban communities and ranging in age from 65 to 92, with a mean age of 71. The results were in contrast with those of many earlier studies which focused on persons who were sick or institutionalized.

In general, the men exhibited mental flexibility and alertness, and were found to be constructive, resourceful and optimistic. They did not display the stereotyped "rigidity" commonly believed to accompany old age.

The intellectual performance of the aged group reflecting verbal abilities was found to be superior to that of young normal controls, although evidence of diminishing function was observed in other tests, particularly in psychomotor speed.

In addition, the chronological age of those who exhibited symptoms of a mild, early mental decline did not differ from the chronological age of those without such symptoms. Thus the investigators were led to question the commonly accepted importance of chronological age as an overriding factor in the development of psychiatric disorders in the aged.

The social factors in the subject's immediate environment were found to be very closely related

to his behavior and attitudes. If the social environment showed qualities of deprivation, as, for instance, in the loss of intimate persons or loss of income, the subject's attitudes and behavior showed more deterioration and manifestation of depression.

Whether or not enforced retirement has unfortunate consequences for the individual depends to some degree, the investigators found, upon whether or not the retirement was accompanied by conflicting internal and external pressures.

Contrary to expectations, studies of cerebral circulation and metabolism revealed no significant difference in cerebral blood flow and oxygen consumption between the aged group and a group of normal young controls with a mean age of 21. Where reductions did occur, they were found in subjects with evidence of arteriosclerosis, suggesting that decreases in cerebral blood flow and oxygen consumption found in older people do not result from the aging process itself but rather from arteriosclerosis.

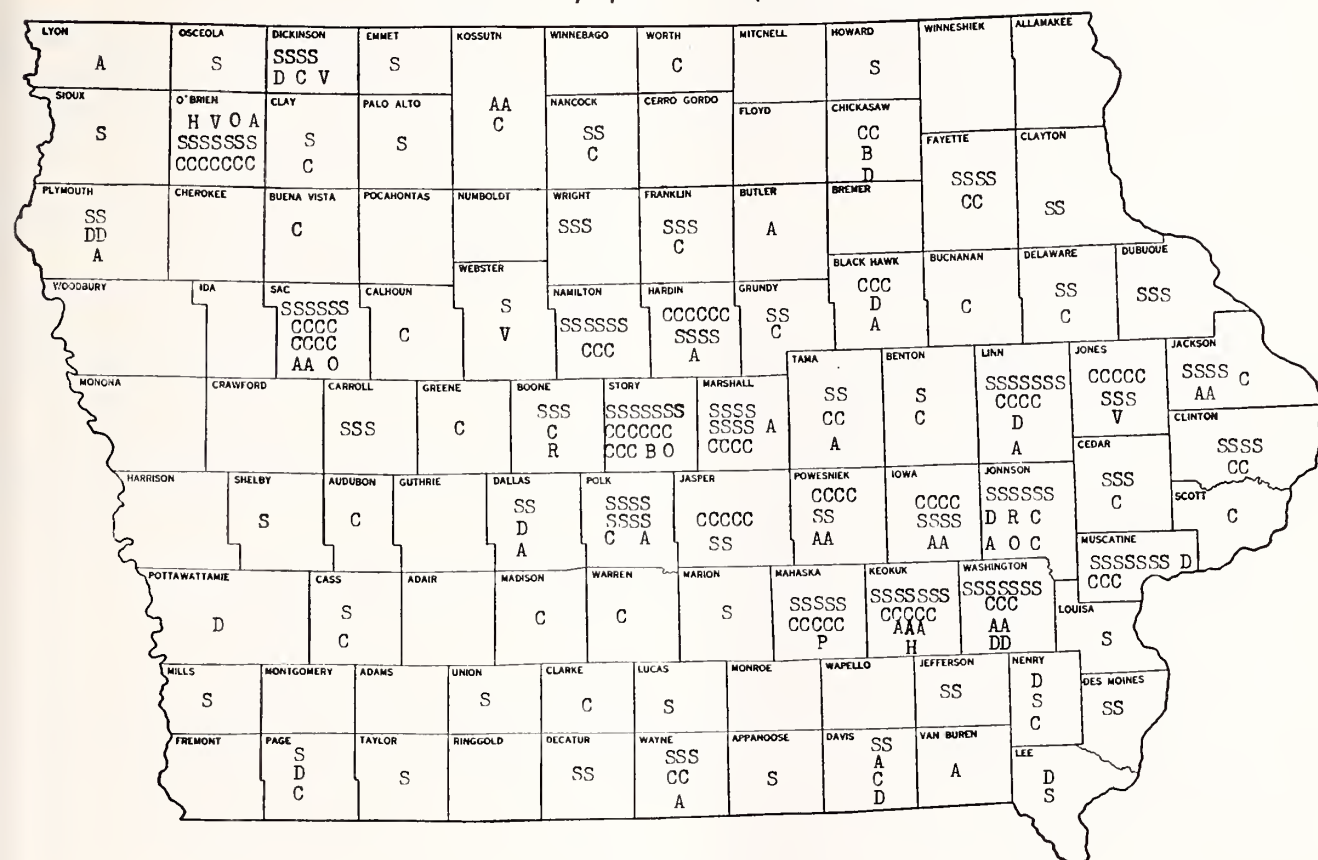
Senior members of the research team who conducted the investigations at the NIMH included Drs. Butler, Seymour Perlin, James E. Birren, Samuel W. Greenhouse, Louis Sokoloff and Marian Yarrow.

1962
NEW CASES—TUBERCULOSIS

Counties	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Adair												1	1
Adams		1											1
Allamakee									1				1
Appanoose			1			1							2
Audubon										1			1
Benton	1		1						1				3
Blackhawk	1	1		1		1		1		3	1	1	10
Boone	1	1							1		1		4
Bremer	1												1
Buchanan												1	1
Cass		1											1
Cedar		1					2						3
Cerro Gordo ..	2			2	1	1		1	1				8
Cherokee										1			1
Chickasaw						1							1
Clarke													
Clay			1					1					2
Clayton		1	1				1	2					5
Clinton		3		1	1	1		1	1		1	2	11
Crawford						1			1				2
Davis	1			1									2
Des Moines ..						1				1	3		5
Dubuque	2		2	1	1		1	2					9

Counties	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Emmet			1					1	1				3
Fayette								1				1	2
Floyd								1		2			3
Franklin											1		1
Grundy								1					1
Guthrie								1					1
Hamilton								1					1
Hancock										1			1
Hardin				1					1				2
Harrison									1				1
Henry										1			1
Howard		1							1				2
Humboldt									1				1
Jackson			1	1							1		3
Jasper			1					1	1	1			4
Jefferson								1			1		2
Johnson				2			1				1		4
Jones												1	1
Keokuk		1											1
Kossuth											1		1
Lee		1		1	1		1	1	5	1		1	12
Linn	3	2	3	3	2	2	2	2	2	1	2	3	27
Louisa			1					1					2
Lucas								1					1
Lyon		1											1
Mahaska								1					1
Marion					1				2	1			4
Marshall		3		2		2	1		1				9
Mills	2						1						3
Monona					1			1					2
Monroe								1					1
Muscatine				2				2		1	1		6
Page							1			1			2
Plymouth										1			1
Polk	4	2	3	4	4	1	3	2	6	3	3	4	39
Pottawattamie ..		1	1	1	1		1					4	9
Poweshiek													
Ringgold												1	1
Sac	1						1						2
Scott		1	1	1	2	2	1	1	4	1	1	2	17
Story		1		1							1	3	6
Tama					1		1		1				3
Taylor									1		2		3
Van Buren		1							1				2
Wapello	1			1		3						1	6
Warren						1	1					1	3
Washington ..		1							1				2
Webster				2					1			1	4
Winnebuck							1	1			1		3
Woodbury	1	1	1		2	2	1	1			1		10
Wright		2	1			1							4
Total	21	28	26	22	18	21	21	31	37	21	21	30	297

Distribution by Species of Reported Cases*



	Cases	D—dog	16	H—hog	2
S—skunk	175	V—civet cat	4	R—raccoon	2
C—cattle	116	O—horse	4	P—sheep	1
A—cat	30	B—bat	2		352

* All cases confirmed by laboratory examination except three cows in Poweshiek County.

Vaccination of Dogs Against Rabies

Rabies is reported in dogs as well as in several other species of domestic and wild animals each year in Iowa. The dog normally lives in close proximity to man and is capable of inflicting severe bite wounds. For these two reasons, most of the exposures of man to rabies are caused by rabid dogs. Elimination of rabies among dogs would thus greatly reduce the number of persons who must take the anti-rabies preventive (Pasteur) treatment each year.

Anti-rabies vaccination of dogs does give protection against the disease. Vaccination has proved effective in laboratory experiments as well as in actual field conditions. The U. S. Army requires anti-rabies vaccination of all pets kept at an Army post or camp. Without exception the results of this action have been good. Some Army camps have been located in areas in which rabies was present.

In these instances rabies did not develop in the vaccinated dogs belonging to Army personnel, even though they mingled with unvaccinated dogs in the areas adjacent to the camp. In Iowa, no rabies has been reported among vaccinated dogs.

The vaccine causes the dog's body to build resistance against the disease, but the process takes a little time. The full degree of protection is not reached until about 30 days after the date of vaccination. Thus, the dog should not be allowed to mingle with other animals—specifically, not to be exposed to a rabid animal—until about 30 days after the date of vaccination. We are sometimes asked, "Can a vaccinated dog get rabies?" The answer is "Yes, if the dog was exposed before the vaccination, or if it was exposed before the protection was fully developed."

Investigations indicate that the dogs reported as having rabies in 1962 had been infected by rabid *wild* animals. This was true of both farm and city

dogs. Thus it is important that dogs in both rural and urban areas be protected against the disease by vaccination. Anti-rabies vaccination of pet animals other than dogs is recommended, too.

Vaccination of young puppies is not always effective. Therefore, if puppies under six months of age are vaccinated, they should be revaccinated when they reach six months of age.

The USPHS Surveys Medical Practitioners

A new survey (Health Manpower Source Book, Medical Specialists) by the U. S. Public Health Service shows changes that have occurred in the patterns of medical practice in the United States since 1931.

It shows, for example, that the proportion of physicians engaged in private practice declined from 85 per cent in 1931 to 66 per cent in 1962. During that same period, the share of full-time specialists increased from 16 per cent to 50 per cent.

The number of physicians increased from 154,406 (126 physicians per 100,000 population) to 257,000 (135.8 per 100,000) in mid-1962. The 1962 figure does not include medical students who were graduated in June of that year.

Internal medicine gained the greatest number of specialists during the period studied, 25,324, but the greatest rate of increase was among psychiatrists and neurologists, 900 per cent. In 1931, the leading specialty, numerically, was ophthalmology-otolaryngology, but by 1962 internal medicine was first; surgery, second; psychiatry-neurology, third; obstetrics and gynecology, fourth; and ophthalmology-otolaryngology, fifth.

In 1931, there were 125,599 general practitioners among the 156,406 physicians in the United States, but in 1962, general practitioners numbered only 102,058 out of the total of 257,000.

About 8 per cent of all full-time specialists in 1961 were employed by the federal government. There were a total of 19,581 federal physicians in 1962. Approximately 11 per cent of the specialists indicated that they were on medical school faculties.


About 14 per cent of the physicians were in training programs as residents or interns.

Help your central office to maintain an accurate mailing list. Send your change of address promptly to the Journal, 529-36th Street, Des Moines 12, Iowa.

Morbidity Report for Month of February, 1963

Diseases	1963 Feb.	1963 Jan.	1962 Feb.	Most Cases Reported From These Counties
Diphtheria	0	1	0	
Scarlet fever	458	319	395	Clay, Jefferson, Johnson, Polk, Winneshiek
Typhoid fever	1	0	0	Muscatine
Smallpox	0	0	0	
Measles	1308	1359	620	Cerro Gordo, Clay, Des Moines, Scott
Whooping cough	29	4	4	Cerro Gordo, Mills
Brucellosis	17	9	9	Dubuque, Scott
Chickenpox	1023	808	303	Cass, Des Moines, Dubuque, Polk, Scott
Meningococcic meningitis	0	0	1	
Mumps	303	227	259	Crawford, Polk, Scott
Poliomyelitis	0	0	1	
Infectious hepatitis	39	27	178	Lee, Polk, Scott, Tama
Rabies in animals	21	12	44	Dubuque, Greene, Jasper, Muscatine, Tama, Washington
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	21	37	29	For the state
Syphilis	59	45	52	For the state
Gonorrhea	92	109	70	For the state
Histoplasmosis	2	4	1	Cerro Gordo, Johnson
Food intoxication	0	0	0	
Meningitis (type unspecified)	2	0	2	Monona, Polk
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	1	0	
Salmonellosis	13	5	1	Dallas, Webster, Woodbury
Tetanus	0	1	0	
Chancroid	0	0	0	
Encephalitis (type unspecified)	0	2	0	
H. influenza meningitis	0	0	1	
Amebiasis	0	0	2	
Shigellosis	2	1	0	Johnson, Polk
Influenza	9*	0	14576	Boone, Muscatine, Page, Polk

* 4 of these cases laboratory confirmed, A₂ (Asian) strain, WHO Regional Virus Laboratory, Iowa City, Dr. Albert McKee.



Woman's Auxiliary News



From Your Editor's Desk

With spring in the offing, gardens will be planted. Here are some suggestions:

1. Plant five rows of "Peas"—
Preparedness, Promptness, Perseverance, Politeness, Prayer.
2. Plant three rows of "Squash"—
Squash Gossip, Squash Criticism, Squash Indifference.
3. Plant five rows of "Lettuce"—
Lettuce be Faithful, Lettuce be Unselfish, Lettuce be Loyal, Lettuce be Truthful, Lettuce Love One Another.
4. Plant four rows of "Turnips"—
Turnup for Meetings, Turnup with a Smile, Turnup with New Ideas, and Turnup with Determination.

With just a little care and attention, what a wonderful harvest we shall reap from this Garden of Co-operation.

MRS. R. H. PALMER

Homemakers' Service

If your county Auxiliary is interested in starting a homemakers' service in your community, or has already started on such a project, you will be interested in the special workshop that the directors of the Homemakers' Service in Des Moines have offered to conduct on Monday afternoon, April 8, following the close of the Monday session of the Woman's Auxiliary Annual Meeting.

The people who have organized and are successfully directing this program in Des Moines have offered to make themselves available to confer with interested members and to assist in any way they can in helping you get your homemakers' service in operation.

This service is much needed in most communities. After the ground work has been done, the program looks for mature women with good hearts, gives them refresher courses—run by professionals—and sends them out, through doctors and social agencies, to handle any and every kind of domestic crisis. Mrs. Allan B. Phillips, of Des Moines, a member of the Auxiliary, is the local chairman of this service, and Mrs. L. L. Maher, of Des Moines, represents the Polk County Auxiliary on the committee.

Woman's Auxiliary 40th Convention

How physicians' wives can best serve their local communities and how to tell the public and profession about these service projects will be featured presentations at the 40th annual convention of the Woman's Auxiliary to the American Medical Association.

Reports emphasizing the Auxiliary's community service activities in the areas of civil defense, health career recruitment, mental health, international health, safety and rural health will be given to nearly 2,000 physicians' wives attending the convention June 16-20 in Atlantic City. Auxiliary headquarters will be the Haddon Hall Hotel.

Formal opening of the Auxiliary's house of delegates will be Monday morning, June 17. A special program for all physicians' wives featuring practical suggestions for carrying out community service projects and telling the story will be given Tuesday morning. The annual tea honoring the president, Mrs. William Thuss, of Birmingham, Ala., and the president-elect, Mrs. C. Rodney Stoltz, of Watertown, S. D., will be held Sunday afternoon.

National Auxiliary past presidents will be honored at Tuesday's luncheon. Dr. George M. Fister, AMA president, Ogden, Utah, will be the guest speaker. The Auxiliary's annual contribution to the AMA Education and Research Foundation will be announced at that time. Last year's check was for \$244,172.

Mrs. Stoltz will be installed as Auxiliary president at the concluding business session Wednesday morning. Election and installation of other national officers will also be held that day with formal adjournment scheduled for noon.

A post convention conference and planning session for 1963-64 for all Auxiliary officers and members will be held Thursday morning. Dr. Ernest B. Howard, AMA assistant executive vice president, will discuss principal actions of the AMA House of Delegates.

A full program for teen-aged members of AMA families will be arranged throughout the week.

All members, their guests and guests of physicians attending the AMA annual meeting may participate in the social functions and general sessions of the Auxiliary.

Local arrangements are under the direction of Mrs. David B. Allman, Atlantic City, chairman. Vice chairmen include: Mrs. Edward H. Dyer,

Mrs. Charles Hyman and Mrs. Harry Subin, Ventnor, N. J.; Mrs. William E. Dodd, Beach Haven, N. J., and Mrs. Samuel L. Winn, Margate City, N. J.

COUNTY AUXILIARIES

Allamakee

The film, "Your Health—Your Choice" featuring Doctor Edward R. Annis has been shown in the northeast corner of Iowa and has been well received. Mrs. M. F. Kiesau and Mrs. R. H. Palmer presented the film to the Postville Monday Club on February 11, as the program for the day. Copies were made of Janet Ellis' report on "The Kerr-Mills Program," and were given to about 35 members attending. It was felt that Mrs. Ellis' report covered the subject so very well that each person would find it helpful for reference. The film presented a side of the issue that most had not heard, and they felt it very important.

The film then traveled to the Fayette County Medical Meeting at Oelwein, via Doctor Henry Wolf of Elgin, and was enjoyed by the doctors on the evening of February 12. On February 13 Mrs. R. H. Palmer presented the film to the Business and Professional Women's Club of Postville, and Dr. Palmer accompanied her, to answer questions from the group. That was a dinner meeting in the Presbyterian Church, with guests. The program was open to the public at 8 p.m. A good crowd of all ages attended, and all seemed to be very happy about their chance to hear Dr. Annis.

The Postville Commercial Club used the film on February 14 as their program, with a discussion following. Dr. M. F. Kiesau and Dr. Palmer were present to answer questions. That group numbered about 35.

The Allamakee County Farm Bureau held a meeting at Waukon on February 19, and again the film fitted nicely into the program. About 50 women representatives from all over the County attended. They, too, were very happy to have the chance to hear Dr. Annis, and reminded us that the Farm Bureau backs our views.

The Allamakee County Auxiliary met in Waukon on February 20. Mrs. M. F. Kiesau, of Postville, presided at the meeting at which new officers were installed. Mrs. C. R. Rominger, Waukon, is the new president, Mrs. L. B. Bray, Waukon, is the new vice-president and Mrs. A. F. Wiley, of Waukon, is the secretary-treasurer.

Black Hawk

The Black Hawk Auxiliary presented checks of \$300 each to the administrators of Allen Me-

morial, Schoitz and St. Francis Hospitals, in Waterloo, and Sartori Hospital, in Cedar Falls. This money represented the proceeds from the annual Medicine Ball sponsored by the Woman's Auxiliary to the Black Hawk County Medical Society, in February.

Dubuque

"Dubuque River Days" was the theme of the tenth Mardi Gras Ball sponsored by the Woman's Auxiliary to the Dubuque County Medical Society on February 23. The Dubuque Elks Club was given a gala atmosphere by shimmering show girls, crafty card sharks, merry minstrels, salty sailors and lusty lumberjacks.

This event marks the tenth year that scholarship awards, from the Mardi Gras proceeds, have been given to deserving young entrants in the field of nursing. For six Dubuqueland graduate nurses and seven student nurses, their nursing education was the direct result of these festivities. These 13 young ladies have received, or are in the process of receiving, their training at either Finley or Mercy Hospital Schools of Nursing in Dubuque.

Mrs. E. V. Conklin, Dubuque, was chairman of the event and Mrs. J. A. Moeller, Dubuque, was co-chairman.

Woodbury

The Sioux Med-Dames, of whom Mrs. Harold Jones is president, entertained the wives of doctors attending the Sioux Valley Medical Association's meeting in Sioux City recently. One of the events was a luncheon at the Normandy.

Miss Betty Hendon, pianist, entertained with selections, and members of the Sioux Med-Dames were the models for the hat show presented by the Agnes Maher Millinery Shop.

ART EXHIBIT

Entries will be received at the
HOTEL FORT DES MOINES
Sunday, April 7
1:30 to 4:30 p.m.

For entry blanks and information write to:

Mrs. F. M. Burgeson, Exhibit Chairman
1166 Chatauqua Parkway
Des Moines 14, Iowa

Why an Auxiliary?

Never before in the history of the Auxiliary has there been a greater need for better understanding on the part of the lay public of the role of American medicine in our democratic way of life. Never before has this role been in greater danger of being subverted by the misinformed and the uninformed, by the self-seeking politician and by the disinterested voter.

Why an Auxiliary? To help create a better image of American medicine; to help create favorable sentiment—the public sentiment that Abraham Lincoln once defined as “just a lot of talk that got someplace.”

Why an Auxiliary? To help the medical profession in every way possible to achieve its foremost goal—the betterment of public health. An active Auxiliary can help the medical profession serve the public, whether it be in the cancer clinic or the crippled children's clinic; whether it be in the pre-school visual screening program or the glaucoma screening program; whether it be in the homemakers' service or any other community service. In short, we need an active Auxiliary to help create a healthier, happier, and safer community in which to live.

We need an Auxiliary to cooperate with our various state political action committees to support those men elected to public office who realize, as we do, that American medicine, though far from being perfect, is the best in the world and that any change toward socialized medicine is a step in the wrong direction.

Why an Auxiliary? To inform the uninformed on medically related subjects; to help doctors where help is needed; to mold public opinion, tactfully, wisely, and, in all cases, to the interest of good medicine, medicine unfettered by prejudice or political influence.

—THE BULLETIN

AMA News

The AMA NEWS has a new department for news of Auxiliary activities around the nation. The editors ask that we keep material coming in—pictures, news clippings or other accounts of Auxiliaries or Auxiliary members' activities that might be of interest to their readers. If you will forward any such items to the Iowa Woman's Auxiliary headquarters, 529-36th Street, Des Moines 12, they will be sent to the AMA NEWS for use in this new department.

Suggest to your husband that he bring home his copy of the AMA NEWS, a bi-weekly publication which he receives with his AMA membership, so that you can read it, too.

AMA Grants \$20,000 to Recruit Nurses

The American Medical Association, on February 22, announced a grant of \$20,000 for the 1963 national student nurse recruitment program. That sum represented a doubling of the AMA's annual contribution to the program administered by the National League for Nursing. Dr. George M. Fisher, the AMA president, said that the increase had been occasioned by the mounting need for nursing personnel.

Mrs. Lucille Petrey Leone, president of the League, said a recent survey of schools has shown that 1962 admissions probably totaled 51,000 for schools of professional nursing—approximately the same number as had been admitted in 1961. For schools of practical nursing, admission probably totaled 27,000—a sharp increase over the 25,000 admitted during the previous year. She went on to say that although nursing continues to attract larger groups of students each year, the rise in admissions is not enough to keep pace with the nation's growth in population and the demand for skilled personnel able to cope with advances in medical care or scientific equipment used in patient care.

In addition to the AMA and the National League for Nursing, the sponsoring organizations include the American Nurses' Association and the American Hospital Association.

Benefit Dance

Remember to send your check for the Benefit Dance (Caduceus Capers) ticket that was mailed to you. Your support of this project will assist the Auxiliary in its effort to help as many students as possible toward their education in one of the health careers. If you should forget your ticket, you can get another at the registration desk or at the door on Tuesday evening, April 9. Even if you find it absolutely impossible to attend the dance, your contribution will be greatly appreciated by the committee.

New Auxiliary

The newly-formed Woman's Auxiliary to the Johnson County Medical Society, with 38 charter members, met on Tuesday, March 12, in the staff room of the Hospital School for Severely Handicapped Children.

The following officers were elected and installed: president, Mrs. J. L. Ehrenhaft; vice president, Mrs. G. H. Scanlon; recording secretary, Mrs. T. T. Bozek; corresponding secretary, Mrs. A. C. Garvy; treasurer, Mrs. E. F. Van Epps; and

parliamentarian, Mrs. R. J. Joynt. Mrs. E. W. Scheldrup was appointed Legislative Chairman.

Mrs. A. C. Richmond, Fort Madison, president of Woman's Auxiliary to the Iowa Medical Society, was present at this organizational meeting.

Medical Quackery

Medical quackery is our educational or "talking" project, says Mrs. J. T. Willis, of Alexandria, Louisiana, the national Auxiliary chairman of Community Service. The following report, which she gave last fall at the Conference for State Auxiliary Presidents and Presidents-Elect will apprise you of the many facets of this serious problem:

"An almost direct result of the increasing public awareness and interest in medicine, health, and its problems is the fantastic increase in all forms of medical quackery. The flourishing of medical quackery has become exceedingly easy with modern communication and transportation media—so easy, in fact, that it is costing the American people an estimated one billion dollars annually.

"Medical quackery, now encompassing both medicine and its allied fields, includes:

Health cultists—chiropractors, naturopathists, faith healers, hypnotists, voodoo artists, etc.

Medical quacks—claiming to have methods or products for the diagnosis or treatment of diseases such as cancer, TB, arthritis, diabetes.

Nutritional quackery—probably the newest and most lucrative of the fields of quackery today. This includes fad diets, dietetic foods, curative foods, etc. Nutritional quackery has a natural appeal to both the ignorant and educated alike.

Device quackery—one of the older forms of quackery—has been given new life by the remarkable progress in electronics and home labor-saving machines. Mechanical gadgets are almost a national craze.

"The Auxiliary has an obligation to expose quacks and, if possible, to educate the public against quackery. The material on this subject is rich; in fact, it furnished one of the original reasons for the organization of the AMA.

"A few sources:

Publications of the Department of Investigation of the AMA—obtainable from the AMA.

Proceedings of the National Congress on Medical Quackery—obtainable from AMA at the price of \$2.00 per copy.

American Medical Association films, prepared pamphlets and exhibits—obtainable from AMA." Iowa Medical Society.

Should Ambulances Be Permitted To Speed?

Speeding by ambulances is often unnecessary and frequently dangerous, yet it is generally believed that speed is vital in all cases. Wilson Wells, executive director of the Western New York Hospital Council, Buffalo, called for a public education program to counteract the general impressions that ambulances must always "race through the streets at breakneck speed" and that at least one ambulance must come "screeching to a halt, lights flashing and siren moaning, whenever an accident or emergency occurs, even if it is minor."

"Patients should be cared for promptly, but ambulance speeding serves only to magnify the chances of another accident or aggravate the injuries of the patient," Mr. Wells said in the March 16 issue of *HOSPITALS*, the journal of the American Hospital Association.

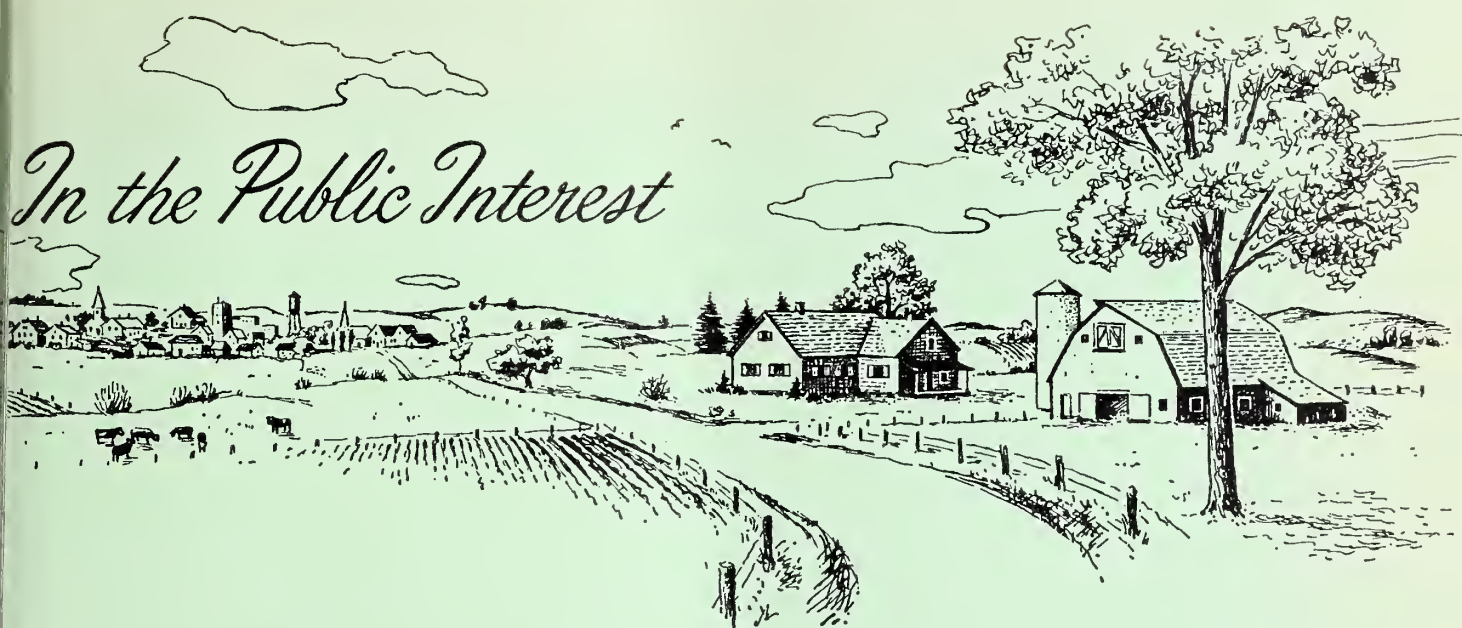
He outlined Buffalo's integrated ambulance service and the city ordinance which controls and regulates the operation of ambulances. The ordinance "frowns on promiscuous use of flashing red lights and screaming sirens," he said. It also requires that drivers file reports with the board of safety within 24 hours after an emergency call, telling whether a flashing red light and siren were used, and the nature of the patient's illness or injury—a good index to the necessity for using the flashing red light and siren. The ordinance has served to cut down markedly on the volume of flashing red lights and the indiscriminate use of sirens, he said.

Buffalo requires the licensing of ambulance attendants and drivers. To qualify, they must pass a Red Cross course in first aid, or its equivalent, and take a special course in emergency obstetrics. The ordinance also outlines the necessary equipment to be carried by ambulances, and sets standards of cleanliness.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. A. C. Richmond, 1132 A Avenue, Fort Madison
President-Elect—Mrs. G. J. McMillan, 436 Avenue C, Fort Madison
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Editor of THE NEWS—Mrs. R. H. Palmer, Box 568, Postville



In the Public Interest

Iowa Should Take Time to Study the Feasibility of Medical Aid to the Aged Through Private Insurance

Within a short time, the Senate of the Iowa General Assembly will vote on a proposal to implement the Kerr-Mills Act. Physicians are asked to enlist their senators' support of it, either by writing to them at the State Capitol, in Des Moines, or by talking with them when they are back home for weekends.

The bill that has been reported out by the Senate Appropriations Committee calls for the appropriation of \$1,680,000 for each year of the biennium beginning July 1, 1963, and concludes with the following statement:

"In making this appropriation, it is the intent . . . of the General Assembly (a) to provide medical assistance on behalf of eligible aged individuals whose health needs are not being met through existing programs and (b) to create a pilot program that will provide experience and information necessary to determine the number and health needs of such individuals and the feasibility of providing for their health care through insurance coverage. The State Board of Social Welfare shall contract with one or more private organizations for the handling and processing of claims . . . , and persons eligible for benefits . . . as Old Age Assistance recipients . . . shall not be eligible for Medical Assistance to the Aged. . . ."

The Committee chose to put *shall* into the last of the sentences just quoted, rather than *may* or *should*, thus not only expressing its preference for the fiscal-agent mode of administration, but asking that it be made mandatory.

MAA SHOULDN'T BE JUST AN EXPANSION OF VENDOR PAYMENT

The unwillingness of the federal HEW Department to utilize the Kerr-Mills program as the complete answer to the health care needs of the elderly is mirrored, to a greater or lesser extent, by the Iowa Department of Social Welfare, and thus the Legislature would be putting the new arrangement into relatively unfriendly hands if it were to let the DSW conduct all phases of it. Comparable agencies in other states have found ways of qualifying considerable numbers of OAA eligibles for MAA, though Congress intended nothing of the sort, and members of the Iowa Board have expressed a desire to follow suit. It might be difficult to prevent their doing so, despite the Legislature's expressed intent. Then the program would fail to provide reliable statistics on the numbers and needs of elderly people who have not been eligible for previously-existing programs.

Under the Vendor Payment Program, the DSW has issued arbitrary and somewhat peremptory orders; it has occasionally intervened between physician and patient, as for example by suggesting what treatment the client should ask for and where he should go to get it; it has been principally responsible for friction in its dealings with "vendors" of other sorts, and it has been reluctant to review and discuss its policies and procedures with representatives of the groups that provide services.

INSURANCE MAY BE THE FINAL ANSWER

The subsidization of health-insurance policies—probably “major medical” ones—will likely be the best way of providing medical assistance to the near-needy aged. Certainly it would do most to safeguard the individual's dignity, for after being issued an insurance policy, he would be altogether indistinguishable from the millions of other Americans who prepay their health care entirely out of their own pockets. Insurance would make less work for the DSW, since all it would have to do would be to establish the applicants' eligibility, and periodically to review the insurance carrier's premiums in the light of the accumulated experience with the MAA program.

Insurance would be economical for the taxpayer, since the premiums wouldn't be “loaded” so as to pay salesmen's commissions and to meet advertising costs, and if the carrier sought to earn a profit, he would have to plan on achieving it through exceptional economies in his overhead, or a non-profit organization would win the bidding competition.

In all probability, several insurance companies will band together to provide coverage to the near-needy aged on a non-profit basis as a public service, since the industry as a whole is anxious to forestall a government take-over of the whole health-insurance part of the insurance business.

USING A FISCAL AGENT IS AN ESSENTIAL FIRST STEP

The employment of an independent fiscal agent will keep the way open for the adoption of an insurance plan, two years from now, and it will gather the data on which realistic insurance premiums must be based.

A fiscal agent can be expected to:

A. Pay Claims for services rendered eligible persons, according to fee schedules that the DSW has arranged with the vendors.

B. Maintain review committees to consider claims that cannot be processed in the usual manner.

C. Keep vendors informed of the rules of the program, and of the procedures to be followed.

D. Submit monthly invoices to the DSW for all expenditures made.

E. Maintain records, and supply DSW with whatever other data it may require.

Under the fiscal-agent plan of administration, the DSW will:

A. Determine the services that will be paid for.

B. Negotiate fee schedules with the groups of vendors.

C. Determine the eligibility of applicants.

D. Receive bids and make a contract with the fiscal agent that it selects.

The fiscal-agent mechanism is the nearest thing to insurance that is now available, in so far as a governmentally-sponsored plan of medical aid for

the aged is concerned. Actually, the fiscal-agent plan is insurance without the risk. Under it, the carrier makes his staff and facilities available for the adjudication (if necessary) and settlement of claims, in return for the actual costs that he incurs in doing the work.

It is altogether possible that the fiscal-agent arrangement may prove altogether satisfactory, and in that case—two years hence—it can be reauthorized either for a set term of years or permanently. It is the technic that the U. S. Department of Defense has used throughout the country, for several years, to manage disbursements for the hospitalization and medical care of the dependents of servicemen, and no one has seriously suggested scrapping it.

But the subsidization of health-insurance premiums is likewise an actuality. The federal government, again, is using it on a large scale in its scheme to help its employees purchase the coverage they desire. In all likelihood, the policies that Iowa may someday assist its near-needy old people in purchasing will be less expensive, both because the insurance carriers are sure to have a special reason for making the Iowa plan succeed, and because no sales work will be involved in enrolling the policyholders.

CONCLUSION

In most instances, our legislators doubtless prefer to settle problems once and for all, but they should regard MAA as an exception. No one knows with any certainty how many people will qualify for its benefits, or the dollar value of the care that an average one of them will need. The insurance alternative, for that reason, isn't yet available, but after two or more years of fact-finding under the fiscal-agent technic of administration, it will be.

To let the DSW set up and start operating MAA could be expected to result merely in the creation of a second Vendor Payment Program and in making the near-needy indistinguishable from the state's present relief clients. On the contrary, the near-needy should be encouraged and assisted to remain in the “private sector” of our American economy!

It is easy to answer the arguments that have been offered in opposition to the fiscal-agent and insurance approaches. One can point to the unquestioned success of the health-care program for servicemen's dependents (utilizing fiscal agents), and of the subsidization of health care insurance for members of the federal civil service. Then one can point out that if one instrumentality of the State of Iowa has found it efficient to contract with private road grading and paving and with bridge-building firms, rather than to buy the requisite pieces of machinery and hire men to operate them, a two-year trial of a comparable procedure in the field of financial management is thoroughly warranted.

THE DOCTOR'S BUSINESS

Tax Savings Via the Short-Term Trust

HOWARD D. BAKER

Waterloo



Even though the Revenue Service has recently taken a firm stand against the use of the short-term (Clifford) trust for such property as medical buildings and equipment, it still offers attractive tax-saving opportunities if properly used. There are many types of property that can be used to avoid the Revenue Service's attack on "lease-back" arrangements for buildings and equipment.

The most logical use for such a trust is to meet the current or anticipated financial needs of your children or other dependent relatives. Otherwise, expenditures that you make in their behalf are treated as personal and non-deductible.

What are the advantages of such a trust? First, it provides for a planned accumulation of funds to help you meet these needs, without imposing a hardship upon you when the need finally materializes. By setting up the short-term trust, you make specific provision for the availability of relatively large sums of money through systematic accumulation over a period of years.

Second, you make yourself eligible for substantial tax savings through the use of the short-term trust. The Treasury Department will contribute generously to the accumulations of your trust through income-tax savings.

AN EXAMPLE

To illustrate the tax-saving feature, let us assume that you are in a 47 per cent federal income tax bracket, and that you have three children for whom you wish to accumulate \$15,000. To accomplish this objective over a period of 10 years will require increments of \$1,500 annually. If you have rental property such as a farm, or if you have cash or securities adequate to produce \$1,500 of income annually, the short-term trust may be a very logical approach to your problem. You assign the property, cash or securities to the trust for a

minimum of 10 years, and the annual accumulation of \$1,500 will accrue to each of the three children at the rate of \$500 each. Since this income is diverted from your tax return, you will save \$705 (47 per cent of \$1,500) yearly, or \$7,050 over the 10-year period. The over-all result of the trust will be that \$15,000 of educational funds will be accumulated in the names of your three children with \$7,950 of your money and \$7,050 of tax savings.

Moreover, if each child's annual \$500 share of the income is distributed and reinvested, that too will earn additional income, increasing the available funds. At the end of the 10-year period, the property or securities in the trust will revert to your ownership, and the trust will cease to function.

What better way is there to secure a 47 per cent return?

REQUIREMENTS

The two major requirements of the short-term trust are that it must be created for a *minimum* of 10 years, and that it must be absolutely *irrevocable*. The trust agreement and related instruments should be handled by an attorney experienced in trusts, for although the trust is relatively simple, failure properly to qualify it could result in loss of the tax advantage.

There is a gift-tax consideration involved in such a trust. The valuation of a 10-year gift of the right to income from property is approximately 30 per cent of the market value of the property at the time of the gift. In the preceding example, if the current market value of the property were \$30,000, the gift valuation would be approximately \$9,000. This amount divided among three donees wouldn't use up even the annual exemption allowed for gifts.

Though such a trust is certainly not the answer to all financial-planning problems, it does provide an avenue for tax planning that may fit your individual circumstances. If you are interested, it would be worthwhile for you to consult your attorney in regard to the use of a short-term trust.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

Iowa Association of Medical Assistants

IAMA Annual Meeting Hotel Burlington, Burlington May 3, 4 and 5, 1963

Friday, May 3

- 5:00 to 9:00 p.m. *Registration*, Mezzanine
7:00 to 9:00 p.m. *Refreshments*, Baroque Room, Courtesy, Des Moines County Medical Assistants
9:00 p.m. *Executive Committee Meeting*, Presidential Suite
(All Burlington stores open until 9 p.m. Friday.)

Saturday, May 4

- 7:00 a.m. *Registration*, Mezzanine
7:30 a.m. *House of Delegates*, Dutch Treat Breakfast, West Ball Room
8:30 to 9:40 a.m. *Hospitality Room*, Baroque Room, Courtesy, Professional Management Midwest, Waterloo
9:45 a.m. *General Session*, East Ball Room
Invocation
Welcome: President, Des Moines County Medical Assistants, Mrs. Twila Curtis
Greetings: IAMA President, Mrs. Margaret Hansen
10:00 a.m. *Medico-legal Problems*, Mr. Cosgrove Walsh
10:45 a.m. *Coffee Break & Booth Visitation*
11:00 to 11:45 a.m. *Artificial Kidney*, Dr. Edward Mason, Iowa City
12:15 p.m. *Buffet Luncheon* West Ball Room
Style Show, courtesy of Carson, Pirie, Scott & Co.
1:45 to 2:30 p.m. *Cancer Film*, Dr. Paul Cunnick, Davenport
2:30 to 2:40 p.m. *Coffee Break & Booth Visitation*
2:45 to 3:45 p.m. *Buzz Session*, Mrs. Marian Little, Cedar Rapids, Moderator
3:45 p.m. *Tour of Klein Memorial Hospital*
6:00 p.m. *Cocktail Hour*, Eastman Room, Courtesy of Des Moines County Medical Society
7:00 p.m. *Banquet*, Ballroom
Master of Ceremonies, Dr. Frank Ober, Burlington
Speaker from AMA

Sunday, May 5

- 8:00 a.m. *Hospitality Room*, Baroque Room, Courtesy of Blue Cross-Blue Shield
9:00 a.m. *Election of Officers*, East Ball Room
Installation of Officers
10:45 to 12:00 Noon Members free to attend Church.
All churches within walking distance of Hotel.

12:30 p.m. *Luncheon*, West Ball Room. Presentation of Officers Speaker, George F. Meintel, AGSW, Psychiatric Social Service, "Mental Health"

Adjournment of convention

Registration fee for the convention will be \$12.50.

The Saturday morning speaker, Mr. Cosgrove Walsh, is an attorney in Burlington.

A film and discussion on the artificial kidney will be presented by Dr. E. E. Mason of the University of Iowa Hospitals. Dr. Mason is a professor in the Department of Surgery, a member of the Johnson County and Iowa Medical Societies, the American Medical Association, and the American College of Surgeons, as well as many other medical and scientific associations. His book *COMPUTER APPLICATIONS IN MEDICINE* will be published this year, and he has written some 33 other works.

Dr. Paul Cunnick, a surgeon from Davenport, is vacationing as this is written and we are unable to give any background information for him. He is showing one of the latest cancer films.

The Saturday afternoon Buzz Session will be an educational round table in which *everyone* will participate. Marian Little, the moderator, is from Cedar Rapids; she is past-president of the Linn County Association of Medical Assistants, of the Iowa Association of Medical Assistants, and of the American Association of Medical Assistants. At present she is chairman of the AAMA Education Committee.

Klein Memorial Hospital was opened Jan. 30 of this year. It is a rehabilitation hospital specializing in therapy for chronic diseases. Bus transportation from the Hotel to the hospital will be furnished.

Mr. George F. Meintel comes to us from the Psychiatric Social Service Division of the Iowa Board of Control of State Institutions, Division of Mental Health in Des Moines. Mr. Meintel will discuss some specific aspects of the mental health program in Iowa and applications which will be helpful to medical assistants in their work.

HELEN G. HUGHES

We cordially invite the Doctors of Iowa and their guests to visit the IAMA Booth at the IMS Convention in Des Moines, April 7 to 10, 1963. Medical assistants will be there each day to answer your questions and acquaint you with our activities and educational programs.

JOURNAL

of The

IOWA MEDICAL SOCIETY



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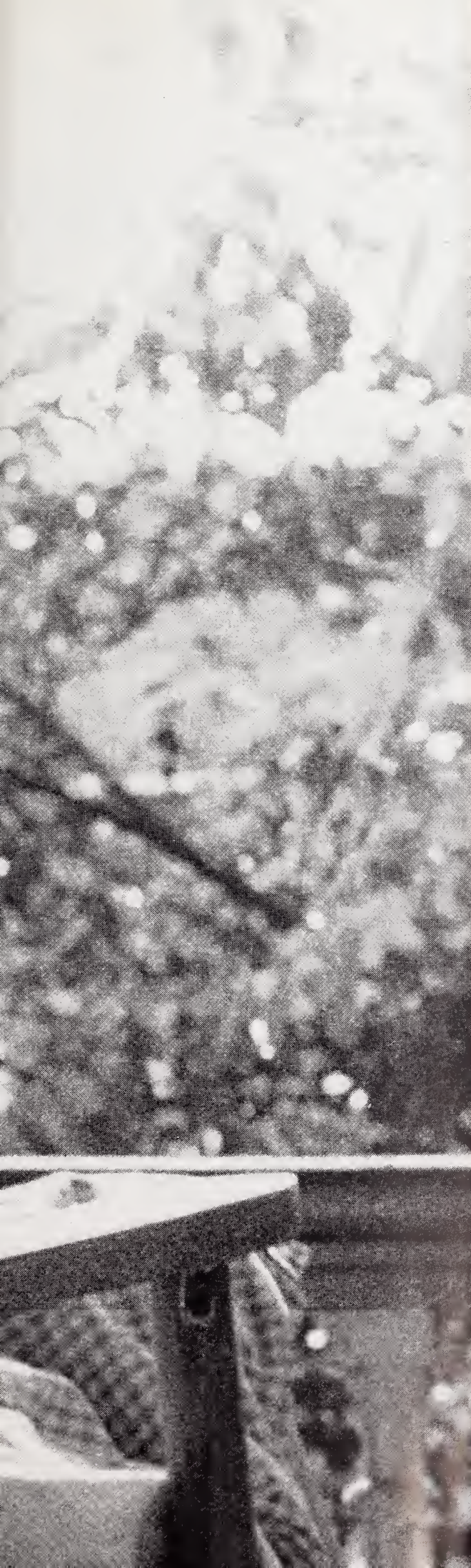
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The Birth of Wisdom

JENKIN LLOYD JONES

Tulsa, Oklahoma

A COUPLE OF YEARS AGO I was passing through my old college town with my pretty daughter, and I stopped at my fraternity house to take her through the old card room.

This card room, I explained, was the house holy-of-holies. Each generation of the brothers carved their names in wooden table tops and when the wood could hold no more the tops were hung along the wall to be regarded reverently by the undergraduates. I was anxious to show my daughter my name in the moldering oak. It, undoubtedly, was the Kilroy in me.

So I took her into the fraternity house and led her up to the card room. But we couldn't get in. They had turned it into a kennel for the house dog.

As I turned away with burning cheeks it suddenly occurred to me that the boys had been pretty smart. Names are not to be worshipped. There is no particular inspiration in reading headstones in a graveyard or thumbing through the telephone directory. The comfort of the house dog is certainly of more legitimate concern than the collection of dusty initials.

For a name deserves to be remembered only in relation to the effect its owner had upon his times. In this, the world's great rascals like Alcibiades and Warren Hastings and Adolph Hitler have a genuine claim to fame. But the only name that deserves reverence, whether famous or not, is attached to that person who has succeeded—in greater or lesser degree in accordance with his talents and opportunities—in changing things for the better.

The name on the wooden tabletop means no more than the name carved deeply into marble on an expensive cemetery mausoleum. These are merely manifestations of Kilroyism. The fact that Kilroy was here is of no importance. The question is: did anything happen because Kilroy was here?

While I was thinking these lofty thoughts, as I departed anonymously from my old fraternity house, it occurred to me that there had been compensations since I walked out that door on graduation day.

Mr. Jones, the editor of the *TULSA TRIBUNE*, made this presentation at the 1963 annual meeting of the Iowa Medical Society.

THE DAWN OF COMMON SENSE

I am smarter than I was then. And so are we all. We are quite a bit smarter. Not cleverer, you understand, for dexterity and the ability to absorb information reach a peak at an early age. We don't learn things as rapidly as we did. Our mathematics is hazier, and our Latin is worse than it was.

But somewhere in the intervening years there has occurred, for most of us, the birth of wisdom. And wisdom is the ability to relate reality to a satisfactory way of life. Wisdom is the practice of common sense. And common sense is the capacity to recognize the obvious.

One of the most obvious lessons that we have learned in our maturity is that it is dangerous, if not utterly foolish, to project a graph indefinitely in the direction in which it is heading at the moment. This truth is simultaneously discouraging and comforting.

Great institutions are born to decay. Great civilizations rot or wither away. Wealth at some point turns a corner and heads toward poverty. Political systems, however enlightened, some time will be followed by political systems much less enlightened. Demagoguery, like crabgrass, is not easily exterminated.

But, on the other hand, decay doesn't foreordain utter collapse. The fact that things are growing worse does not mean that they will never grow better. New trees grow out of rotten stumps. And new civilizations, new enterprises, new philosophies, are sprouted and nourished from the wreckage of the old. Jungle flowers anchor their roots in a thick carpet of death.

This does not mean that Pollyanna was a great philosopher, or that one cannot doubt the Horatio Algerian doctrine that pluck and honesty will always win out in the end. Heroes sometimes have woefully short lives while cowards usually collect their old-age pensions. Truth crushed to earth often stays down for a very long count. There are times when courage is not enough. There are times when wise men abandon a leaky ship, sell an ailing business or flee before a howling mob.

THERE IS HOPE FOR THE FUTURE

But too many of us, and particularly we in the newspaper business, are professional hand-wringers.

We wring our hands over the Communist menace. It is, indeed, a clear and present danger. But it is a danger, not because it might work, but be-

cause even where it prevails it fails. If it delivered the good life it promises, we would be immoral to oppose it. But why is there a Communist menace in the poor and shabby and underdeveloped areas of the earth? Simply because vast masses of human beings are beginning to rebel against older oppressions. Since these masses are both ignorant and gullible, it is not remarkable that many of them would fall for a slickly-advertised swindle that passes itself off as a shortcut to human justice.

Let us take comfort, however, in the fact that these stirrings are happening among people whose recent ancestors dumbly accepted the divine right of a lot of pipsqueak potentates, emperors, rajahs and chiefs. This is a gain. It is the American revolution—exemplifying the desire of human beings to stand in individual dignity—that is really bugging the world.

And this desire is feared by no one so much as by the Communist leaders themselves. To their dismay they have found themselves the proprietors of a Heaven which must be surrounded by mine fields, barbed wire and walls—not to keep the devils out but to keep the angels in.

If you would maintain that time is on the side of tyranny you will have to ignore the set of the tide of human history. Our job, in these confused decades where rising expectations have risen far faster than human sagacity, is to promote a steady growth of genuine human freedom so that our children's children won't have to claw their way out of any pits.

The population explosion has me genuinely worried. Successful as we may be in the more bounteous technics in agriculture, in scientific fisheries, in the quest for new synthetics and novel sources of power, the fact remains that humankind cannot add 120,000 individuals each day to the earth's population for very long. For the end result of chronic overpopulation is growing want, and the man in want easily sells his liberties for mere existence.

This problem cannot be ignored much longer. Yet the fact that it exists is, in a measure, encouraging. Six hundred years ago, in the awful days of the Black Death, philosophers wondered whether mankind would survive at all. We would be stupid, indeed, if with our wonderful knowledge of preventive medicine we so proliferated our kind that we might desperately resort to enough atomic warfare to make this gloomy fear come true. Man may not be very smart, but I doubt that he will prove to be that dumb.

This blessed wisdom that graphs are not to be continued into the future until the lines rise to a perfect Heaven or descend to a perfect Hell is something that has come upon most of us since we left school. The collegian may be bright, even brilliant. But he is too young to have a real sense of history. And I believe that the man who has a

sense of history, while he may be slow to cheer, is also slow to panic.

SHIBBOLETHS

I used to think I knew all about such things as "liberty," "freedom" and "democracy." These were articles of faith. These were good words. You put your arm around them. Today I'm not quite so sure about these words. Take the phrase, "academic freedom." Once in a while, when I was in school (and I'm sure it still occurs), some country bumpkin over in the state legislature would grow nervous about alleged Communist influence on the campus. He would demand an investigation of the faculty, and we on the student newspaper would rise up in wrath and recite that well-worn old quotation about how it was the duty of our university to "shift and winnow" for the truth. Boy, what eloquent editorials we used to write!

Now, surely it is necessary to avoid the rocks of Scylla. A university can't get very far in examining the social sciences if it is to be limited to the mores of the Bugscuffle Luncheon Club and various chambers of commerce, Epworth Leagues and sodalities. A university, if it is going to be worth the money it costs, must stay pretty well ahead of the people.

But there is a Charybdis, too. A republic may boggle at sending those who would destroy it to a concentration camp or to the wall. But neither is it under any moral obligation to support and subsidize its would-be assassins. Nor must it hire these assassins to teach its youth at an age when youth hasn't learned to be healthily skeptical.

There are limits to academic freedom, just as there are limits to freedom of the press or freedom to point a gun or freedom to drive an automobile. Some of the faculty martyrs whom we stridently defended from a suspicious legislature turned out to be dedicated Reds, after all. They were not "sifting and winnowing." They were doing their level best to promote an October Revolution in which a disciplined minority could seize the government and run it, ostensibly at least, for the benefit of the incompetent majority. This is the rationalization of dictatorships everywhere. But I doubt if the self-governing majority is required, as a matter of academic freedom, to pay each of these boys a salary. Let them hire their own hall.

I have a livelier appreciation of liberty than I had when I last hurried into an eight o'clock class at 8:15. I have listened to tales of terror from little people who are condemned to live out their lives in the shadow of Big Brother. I have been dogged by secret police through 200 miles of Rumania. I've searched for "bugs" in my Moscow hotel room. They can put 'em behind the plaster now, you know. I once spent a long day locked up in the Budapest airport before Communist guards hustled me aboard a westbound plane. There was nothing to eat but chocolate, and nothing to drink

but beer. My stomach hasn't forgotten this atrocity.

But *liberty*, too, is a word worth examining. We speak of the "liberated" ex-colonies of Africa. Yet the poor Ghanian has far less liberty under Nkrumah today than he had under the British colonial administrators. At the same time Mr. Toure's Guinea natives lost their white overlords, they also lost the right of *habeas corpus* and the protection of the common law.

It is ironic that the unabashed institution of human slavery survives only in those shiekhdoms which are free of European domination. I am suspicious, it is true, of the Portuguese. But even if the padrone rules the natives with a heavy hand in Angola and East Africa, I doubt if his hand is as heavy as that of the witch doctor who will surely succeed him.

Two years ago on the shores of Lake Chad, just south of the Sahara, a grinning, leaping tribesman demonstrated to me how he had killed a lion with his spear. Here was a paleolithic man. He would have been at home in the 40th century B.C. In fact, he is still in it.

In the whole country of Chad there is not a single newspaper. There were, when I visited it, two natives who held university degrees. Yet I see Chad listed among the so-called "emergent nations" whose favor we are supposed to cultivate in the United Nations.

I don't know about a foreign policy tailored to please or flatter paleolithic minds. The word from Oxford, Mississippi, is getting to Fort Lamy. If we don't give it to the Chadians, Radio Moscow and Radio Cairo will. Naturally, we are embarrassed. But I would be suspicious of some of the frantic efforts some of our liberal theorists might make to overcome the anger of the Chadians about Mississippi.

When I was a student of political science, we all assumed that the first step in expanding justice around the world required the dismantling of the old imperial system. Well, it has been pretty well knocked down. But now we are learning to our dismay that native tyrants can be quite a bit more ruthless than the old governors-general, and a lot more irresponsible. So self-determination is not, in itself, a one-shot cure for man's inhumanity to man.

TRUE PATRIOTISM

When I was a callow young collegian I was far too smart to be patriotic. This "Stars and Stripes Forever" stuff was for the birds. It was the narrow chauvinism that caused quarreling children to play King of the Hill. It was the madness that sent the little people under the bear totem to kill other little people who bore the snake totem. No, I wanted none of this "My country right or wrong" hokum. I was a citizen of the world.

In the years that have followed, I have had occasion to ponder about patriotism.

On a Navy aircraft carrier, on the nights before the strikes, I used to watch the young pilots lying on their bunks staring silently at the overhead. You knew they were wondering who wouldn't come back. Some of them didn't, including my roommate. Well, I guess these boys suffered from stereotyped thinking, as we used to call it in college. They were full of the Stars and Stripes Forever and were gung ho for victory and all that jazz. They were also scared, but they laid their lives on the line.

And then I remembered a news picture of a crowd of young men in the Brooklyn borough hall on the day before the draft went into effect. It seemed that if you could get married before the next day you could be classified 3-A and deferred to some safe and lucrative defense job. And here was the corridor jammed with grinning youth all waving at the camera. They had grabbed their girls—or any girls—and rushed down for their marriage licenses and their exemptions. No square Johns, these. These cats were hep. They knew the score. They had an angle. Pardon me if I spit.

If a nation hopes to survive, it had better keep itself well stocked with cubes who are ready and willing to go forth and do some dying. I notice that the angle-players never refuse to share in the fruits of victory.

And patriotism is something a lot bigger than the chesty boast that my gang can lick your gang. Patriotism is the feeling that while everyone has a right to his own backyard, your backyard is your special concern. It's a good backyard, and you want to plant some flowers in it and keep the trash picked up. Patriotism is a little like the special attention you devote to your own dog or your own child, even though you may love all dogs and all children.

Patriotism is the pride in its tradition, the awareness of its beginnings, the admiration of its heroes without which no people has the morale to become a great people. It is the impatience with second-bestness for your country that helps prevent the spread of internal decay.

I have no particular quarrel with One-Worlders. They are nice people and we are certainly heading into years that will see the rise of strong super-national organizations. But the trouble with a lot of One-Worlders is that they are so busy being cosmic that they don't have time to help throw the rascals out of City Hall. They wind up of little use either to their own country or to that of anyone else.

My admiration goes to the man who says: "I love my country, and because I do, I'll try to purify her motives and improve her behavior." That's a patriot for you.

GOVERNMENTAL PLANS ARE NOT THE ANSWER

The year I carved my name in the tabletop I cast my first vote for President of the United

States. Mr. Hoover was running for re-election against Governor Roosevelt of New York. I voted for Norman Thomas, the socialist. The nation was in the travail of the Great Depression. I thought Mr. Thomas was a little radical, but at least he had a plan. I didn't realize that only a few short years would pass before Mr. Thomas' plan would look conservative! Anyway, young people are likely to be enamoured of plans. And some plans, at the governmental level, were certainly overdue.

But I have learned something about government planning. As the tempo of life speeds up, as the nation grows more crowded, as natural resources become less abundant and we all grow more delicately interdependent, the role of government as an arbiter and umpire becomes increasingly necessary. But only up to a point.

There is a point at which government direction of the individual and supervision over his activities collides with the law of diminishing returns. The rubble of East Berlin stands in mute testimony to this truth. The bankruptcy of the collective-farm system is not accidental. There is a certain marvelous wisdom in a mass of human beings all trying to do what they, as individuals, think is best—or at least most profitable. It is a wisdom that can be equalled by few self-appointed geniuses, overlooking the Potomac or tucked away behind the cozy Kremlin walls. Government is an effective distributor of wealth, but no great shakes as a wealth-producer. I didn't know this when I voted for Norman Thomas.

In the years since I left college, I have learned a lot about people. One does so by the simple process of watching people grow up. I have learned, for example, that no matter how beautiful she may be at 20, after the age of 35 the shallow woman begins to look shallow, the stupid woman stupid and the mean woman mean. I have learned how important it is to distinguish between those youthful deficiencies which are curable and those which are not.

A wife, for example, can do something to reform an un-smooth husband. She can pick out his ties, supervise the tailoring of his suits, and kick him under the table for his gaucheries. Eventually, she may produce quite a satisfactory product. But selfishness, timidity and a tendency to tamper with the truth are generally incurable if they are still remarkable at college age. The person who marries with the idea of correcting major failings in a spouse's character is bound for disappointment. It sometimes takes a sharp eye to distinguish between the collegiate hell-raiser, who in his immature way is merely manifesting the high boiler pressure that will lead him to great things, and the moral paraplegic who is surely heading for alcoholism and general delinquency. But there IS a difference which is often apparent to the experienced eye.

The lack of experience that sometimes causes

youth to judge character by faulty or superficial standards accounts for the fact that oriental and Latin parents boldly take over the job of picking mates for their children. Unfortunately, what these parents often overlook is good old sex-appeal, and that's why this system doesn't work very well, either.

INDIVIDUAL EFFORT IS ALL-IMPORTANT

Finally, ladies and gentlemen, I have learned one other lesson, and that is that an individual man or woman can change things.

When I was in college it was popular among many of my professors to discount the importance of the individual and to dwell upon dynamic forces like economic determinism and geopolitics to explain the turns of history.

Hero worship was in bad repute at the college level. It was the age of debunking, and you established yourself as an intellectual by scoffing at the marble statues and perhaps saying a good word or two for the devils of the past. Thus, we were told that George Washington was a military blunderer, but that victory for the colonists had been assured because Britain was unwilling to commit the resources necessary for a long colonial war. Conversely, it was suggested that Benedict Arnold was not such a bad fellow, after all, but was goaded into treachery by the refusal of the Continental Congress to recognize his great talents. This was hokum. Heroes do exist and so do villains, and both provide fulcrums around which human society can swing.

It took a special kind of man to stand before the Continental rabble on the Cambridge Commons and keynote the birth of a nation with the words, "Let us raise a standard to which the wise and honest can repair." Without this man, in the dark hour before Trenton or under the hungry moon at Valley Forge, the tiny flame would have flickered out. Lord Howe had his war won half a dozen times. If he had had a computer he could have proved it. But there are things of the spirit that confound the science of war.

And Benedict Arnold was real, too. His driving thirst for glory would have kept his memory green in the nation if he had been shot in the heart instead of in the leg that afternoon at Saratoga. But he was an American Macbeth. His greed could have killed the nation—and would have done so if Major Andre had taken the fork to the left instead of to the right at Tarrytown.

In my senior year, Adolph Hitler became chancellor of Germany. Some of our professors told us that although Hitler was undoubtedly a demagogue, he expressed the frustration of the German people brought about by the cruel provisions of the Versailles treaty. But, we were reminded, the German people were too cultured, too intelligent, to put up with him for long.

Fourteen years later when I stood on a pile of

human ashes and stared at the rusting doors of the crematory ovens at Dachau, I remembered, bitterly, this bland assurance.

In the hour of Dunkirk, when the weaponless remnants of the B.E.F. streamed back across the Channel in boats and barges and private yachts, the whole world paused and listened to the growl of the bulldog over the B.B.C.: "We shall not flag nor fail. We shall go on to the end. We will fight on the beaches, in the fields and in the streets. We will never surrender!" And a beaten nation lifted its head and went to war again.

People—individuals—do count. They can count for good or evil. They can change history. Joan of Arc was not shoved into the center of the stage by an economic formula. She was a personal phenomenon. And so, potentially, is every baby born.

It is true, of course, that there are what Shakespeare called "tides in the affairs of men." Men who ride with those tides go far, and those who stand against them are often overwhelmed. You cannot blame our historians for seeking formulae to explain the past and to foretell the future. But man does not lend himself to formula. And there have been and will be men and women who, unlike King Canute, will stretch forth their hands and still the waves—or create a hurricane.

I am no admirer of professional optimists, those who listen enthralled to the twittering of the birds while the cesspool runneth over and the garbage accumulates. I think there are some pretty awful things going on—that we are bogged down with a lot of pseudo-science, a lot of zany social theories, and, worst of all, with a widening gap in which our plodding philosophies fall steadily farther behind our bounding mechanical genius.

But in the long run there is improvement. Some of the improvers have been inspired geniuses—and thank Heaven for them. But most of the improvement has been accomplished by the largely-anonymous and forgotten brick-on-brickers who have succeeded through the centuries in overwhelming the destroyers and, like the Lilliputians in Gulliver's tale, have managed to pull the huge world along.

Last spring near Arles, in southern France, I crossed an ancient footbridge built of flat bricks in the Roman style. And on a broken brick above the keystone was the word, "fecit," which means "made it." So somebody made the bridge, of course. But who? He, being human, wanted to be remembered for his little work. But his name has been lost and will never be learned again. Another discarded tabletop. Yet 50 generations of human beings have used that bridge, and perhaps another 50 generations will. Here is a monument to a man far better than a marble tomb, even though it lacks his name.

You cannot look very far before you begin to sense the immense power of the brick-on-brickers—the people wise or stupid, rich or poor, gifted or

ungifted, who within the limits of their talents and their opportunities have tried to do a conscientious job.

Last month an eager woman came to my office to show me the picture of a bright-eyed but sickly-looking boy of 12 dressed in rags. She explained that her sister living in Bogota had found this boy, that her family had purchased medicine for him, and that her sister had written that there were hundreds like him. Would our newspaper start a campaign to help these children.

I shook my head. There are not hundreds of these children in Bogota, but thousands. There are 100,000 such children in Caracas and at least a quarter million in Rio. To direct aid to one out of 100 would be cruel. To do more on a private charity basis would be impossible. No, I said, we wouldn't help. She went away, crestfallen and disappointed. She had tried to do a decent thing and I had rebuffed her. She had been foolish—magnificently foolish.

And then I remembered the wife of the oil company executive at the country club buffet the previous Sunday. She had had a loud and somewhat tipsy argument with the chef because he had refused to cut into the middle of a large stand of roast beef in order to give her the center slice. She, too, had been foolish—despicably foolish. There is a whale of a difference.

Last November I was sitting in the observation car of a Northern Pacific train crossing Montana. I asked the brakeman if he did much hunting.

"No," he said, "I'm a little too old for the woods now. So I spend my spare time trying to straighten out drunk Indians."

"You what?"

"Yes," he replied, "You see I'm an alcoholic. My wife divorced me years ago and I got lonelier and drunker until I lost my job and it was awful. And then I got on AA and finally got my job back. And last year another AA and I thought we'd see if we couldn't start a chapter on the Flathead Reservation where they really needed one. Well, sir, it's been a wonderful summer. We never have less than 25 at a meeting, and we think we've dried out three men and a squaw."

Three Indians and a squaw! I started to laugh. And then I saw how his eyes gleamed with pride and pleasure. Here, too, was the builder of a bridge. The name of the builder will not be remembered, for it was a very small bridge. But four human beings had passed across it.

A road is the product of many hands. An automobile is put together by three city blocks of guys named Joe working on an assembly line. Put the automobile on the road and you have a way to town. The way to town is an escape from the boredom and isolation of the once-frontier farm or ranch.

Yet I remember that somewhere in every county, when I was a child, there was a bleak brick build-

ing behind a high fence. It was the county asylum. And into it the community dumped the melancholic farm wives who had begun mumbling to themselves during the long winters, and the broken men who couldn't handle weevils and wheat rust and Bang's disease and so had taken refuge in waking dreams.

Today the road to town is open, and the asylums are becoming old people's homes. Who did this good thing? The psychiatrists, of course—the clever men who learned to shock the moody out of their deadly reveries. But let's not forget the researchers in agriculture and the lowly farm agents and the pesticide manufacturers and the bulldozer makers and pond-builders who have all combined to make once-helpless human beings the masters of their environment. And how often does it occur to the grimy joker who made the hot asphalt mix that upon his work a woman traveled into town to find renewed interest and renewed enthusiasms? And how often does it occur to Joe on the assembly line that he helped make a vehicle that saved a mind?

CONCLUSION

And so, ladies and gentlemen, I would say that the greatest sin is cynicism and despair. The great-

est foolishness is to live comfortable but ineffective lives where the Lord has given us the capacity to be effective.

Old Tom Gilcrease died in Tulsa last spring after spending his entire fortune in putting together the great Gilcrease collection of western art, now the property of the city of Tulsa. Old Tom was part Indian, and like an Indian he was sparing of words.

"I think," said he, "a man should leave a track."

Is there any greater tragedy than to be carried to the graveyard after having consumed 30 tons of groceries, leaving no tracks except to and from the privy?

In the years since I carved my name on the tabletop I have observed a long succession of self-promoters, property-grabbers, medal-seekers, drink-cadgers, and people who live to get the center slice in the roast beef. All have one wistful thing in common. They would like to be remembered well.

The brick with the name on it is easily broken, yet he who leaves a bridge behind leaves an enduring monument. We callow youths who carved our names on the tabletop deserved the desecration that came with decorating a kennel for the house dog.

It was the man who built the table who should have had the honor.

New Officers of the IMS

At the final session of the annual meeting, on April 10, Dr. C. V. Edwards, Sr., of Council Bluffs, was installed as president of the Iowa Medical Society, and the following physicians were elected to other offices:

President-Elect O. D. Wolfe, M.D., Marshalltown
 Vice-President Oscar Alden, M.D., Red Oak
 SecretaryR. F. Birge, M.D., Des Moines (re-elected)
 TreasurerV. L. Schlaser, M.D., Des Moines
 TrusteeJ. H. Sunderbruch, M.D., Davenport
 Councilor,
 Third District J. L. Powers, M.D., Estherville
 Councilor,
 Fifth District N. W. Irving, Jr., M.D., Des Moines
 Councilor,
 Eighth DistrictJ. H. Sunderbruch, M.D., Davenport (re-elected and resigned)
 Councilor,
 Tenth District E. E. Gamet, M.D., Lamoni
 AMA Delegate D. F. Ward, M.D., Dubuque (re-elected)

AMA Alternate

DelegateE. M. Smith, M.D., Eagle Grove (re-elected)

Speaker of the House of

DelegatesL. J. Halpin, M.D., Cedar Rapids (re-elected)

Vice Speaker of the House of

DelegatesP. M. Kersten, M.D., Ft. Dodge (re-elected)

Liaison

DelegatesC. P. Hawkins, M.D., Clarion
 R. C. Larimer, M.D., Sioux City

Organizational meetings of the Board of Trustees and the Judicial Council were held immediately following adjournment of the House of Delegates. Dr. S. P. Leinbach, Belmond, was re-elected chairman of the Board, and Dr. F. G. Ober, Burlington, was appointed to succeed Dr. J. H. Sunderbruch, Davenport, as Councilor from the Eighth District.

Dr. C. E. Radcliffe, Iowa City, was re-elected chairman of the Judicial Council, and Dr. K. E. Lister, Ottumwa, was elected secretary of the Council.

Scientific Articles

The Clinical Value of Neuromuscular Electrodiagnosis

ROBERT H. JEBSEN, M.D.
Cedar Rapids

THE GRADUAL DEVELOPMENT of increasingly sensitive equipment and new technics of examination has resulted in a markedly increased practical value of neuromuscular electrodiagnosis. This paper will survey the development of the various electrodiagnostic tests with particular attention to electromyography and nerve conduction velocity determination and to the value of these technics in clinical practice. Several illustrative case studies will be presented.

REACTION OF DEGENERATION²

The reaction of degeneration test depends upon the fact that nerve tissue is approximately seven times more sensitive to electrical stimulation than is muscle tissue. A stimulating electrode is applied to the skin over the area where the motor nerve enters the muscle (motor point) and a short-duration (faradic) current is applied. If a functioning nerve is present, the nerve will be stimulated and will in turn stimulate the muscle, causing a visible twitch. However, if the motor nerve is not functioning, this short-duration stimulus will be insufficient to stimulate the muscle directly (due to the lesser sensitivity of muscle tissue), and no contraction will be noted. A longer-duration stimulus (galvanic) is then applied, and a sluggish contraction due to direct stimulation of the muscle will be noted. Thus, if a muscular contraction is noted with galvanic stimulation but not with faradic, reaction of degeneration is said to be present. Since this is a very gross test with a limited capacity for determining partial denervation, and it is

of no value in diagnosing primary muscle-tissue disease, it should be considered obsolete.

RHEOBASE, CHRONAXIE AND THE STRENGTH-DURATION CURVE^{2, 7}

The use of rheobase, chronaxie and the strength-duration curve enables the examiner to detect complete or partial denervation and to detect reinnervation. In determining the rheobase, the motor point is stimulated for a prolonged time (300 milliseconds), and the rheobase is defined as the minimum intensity required to produce a visible contraction with such prolonged stimulation. This value drops when a muscle is denervated.

The chronaxie is the time required to produce a contraction when double the rheobase intensity is used. This value is normally less than 1 millise-

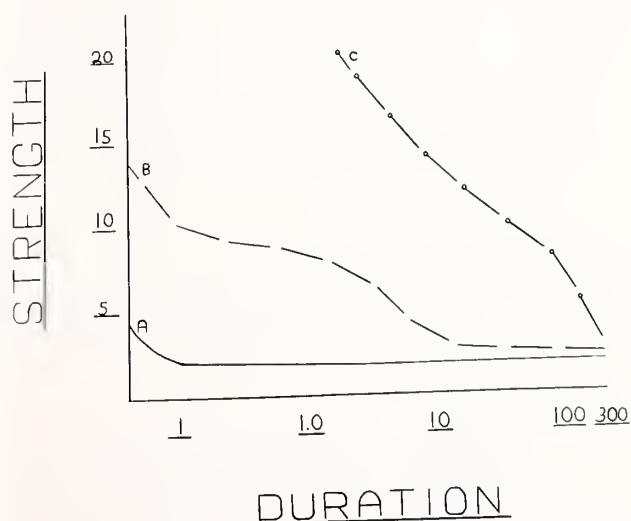


Figure 1. The Strength-Duration Curve. A—Normal Curve, B—Partial Denervation, C—Complete Denervation. Strength is in milliamperes; Duration in milliseconds.

ond, and if above 15 milliseconds, it usually indicates complete denervation.

The S-D curve is merely a series of determinations of the strength of stimulation required to produce contraction at varying durations of the stimulus. The normal curve appears as in Figure 1 A. (Note that the stronger the current, the shorter the length of time it need be applied.) Figure 1 B, shows the usual pattern with partial denervation, and Figure 1 C shows the pattern of complete denervation.

The S-D curve is still widely used, but it is limited in application to cases of known or suspected lower motor neuron disease, and is not helpful in the differential diagnosis of myopathic and neuromuscular junction disease. It is helpful in detecting very early denervation or very slowly progressive denervation.

ELECTROMYOGRAPHY^{2, 6, 7, 8}

In 1929, Adrian and Bronk¹ first inserted needle electrodes into living muscles, and discovered, contrary to previous theory, that there is no electrical activity when the muscle is at rest. Since then, the study of the electrical activity of muscle, electromyography, has become progressively more valuable in diagnosis. With this refined technic, we are able to evaluate the individual components of the

motor unit: the anterior horn cell, its axon, and all the muscle fibers it supplies. Thus electromyography is of value in diagnosing primary muscle disease and myoneural junction disease as well as neuropathies (Figure 2). It is important to realize, however, that the test is of no value in diagnosing diseases other than those of the motor unit—for example, multiple sclerosis or cerebellar disease—except in a negative sense.

In performing the test, a fine gauge wire coated with plastic is inserted into the muscle. This picks up changes in electric potential as do the electrocardiograph and electroencephalograph electrodes. Only a tiny portion of the metal tip is exposed. This electrode surface is necessarily small to prevent pickup of so many potentials that only a blur would be recorded. Potentials from approximately 20 motor units can be detected in the range of sensitivity of the electrode tip. After amplification, the potentials are then projected onto an oscilloscope and through a loudspeaker so that they can be both seen and heard. The oscilloscope is used in preference to a pen recording because the wave forms appear too fast for a pen to follow.

Normally, there are four steps to the examination, and these will be discussed first as they apply to the normal, then to neuropathic disease, and finally to the primary muscle diseases.

THE MOTOR UNIT

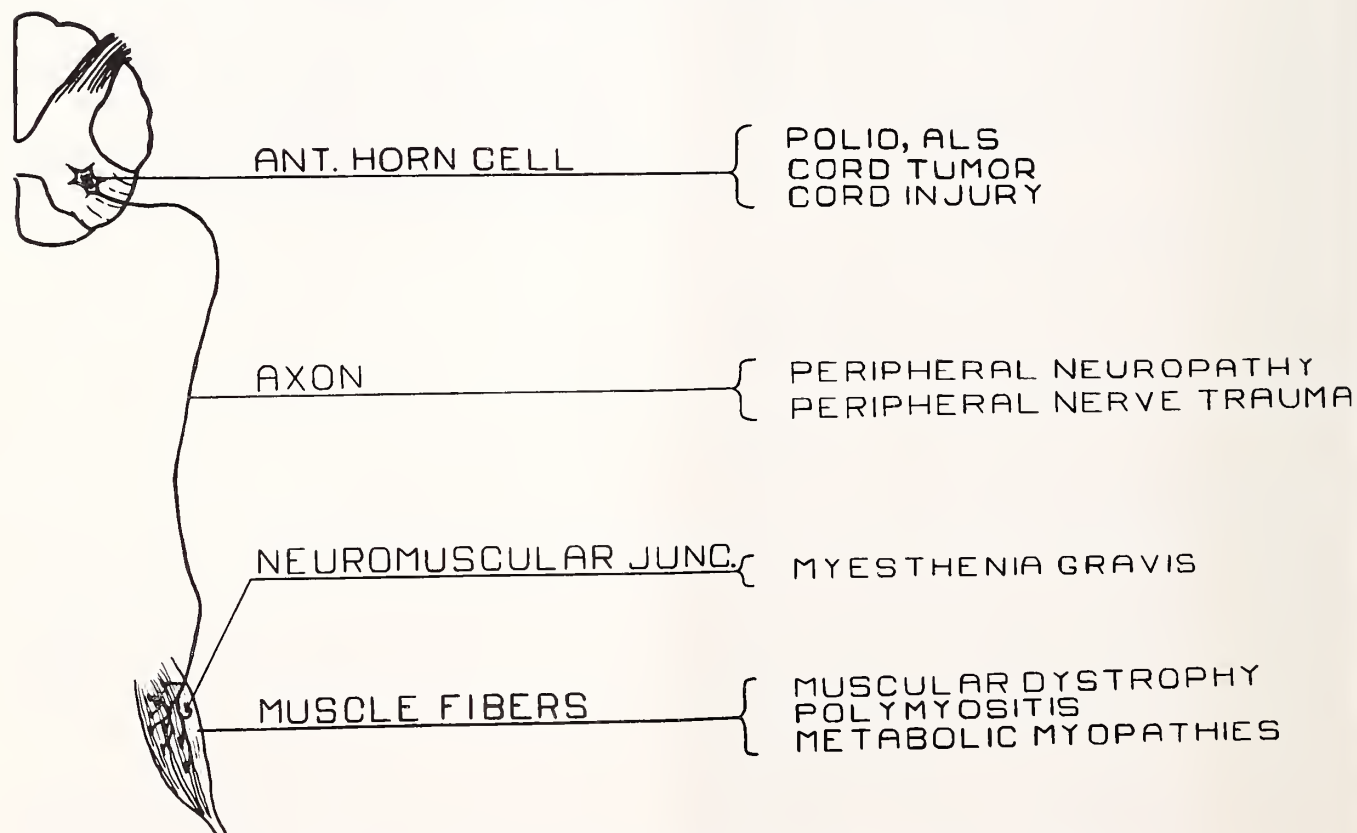


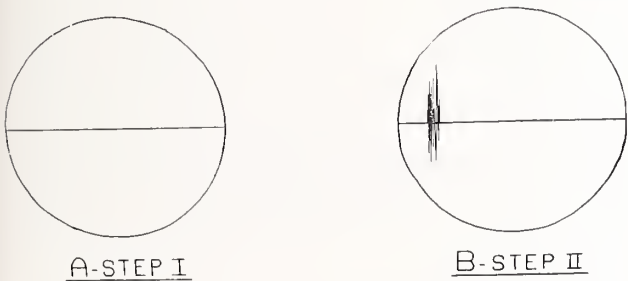
Figure 2. The Motor Unit: Its component parts and some typical diseases of each part.

THE NORMAL ELECTROMYOGRAM

Step I: The needle is inserted into a resting muscle. Normally no electrical activity is noted (Figure 3 A).

Step II: The needle is moved about slightly. Normally, movement of the needle produces a burst of electric potentials as muscle fiber membranes are disturbed; however, such potentials cease as soon as needle movement stops (Figure 3 B).

Step III: The patient is asked to produce a slight contraction of the muscle being tested. Normally this results in the repetitive discharge of one or two motor units in the area of the exploring electrode, each firing at a rate of 5-15 times per second (Figure 4 C). These normal motor unit action potentials are (a) diphasic or (b) triphasic, and are usually 200-1000 microvolts in strength (height), and 8-12 milliseconds in duration



NORMAL EMG

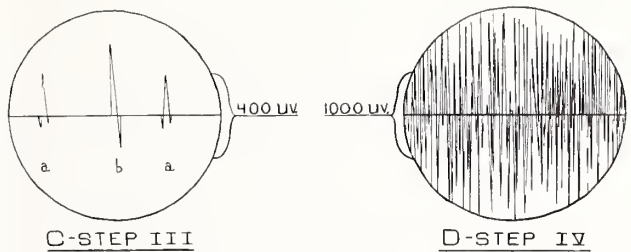
Figure 3. The Normal EMG. A—Step I—No electrical activity is seen when the muscle is relaxed. B—Step II—Potentials are produced as the needle is moved, but cease as soon as needle movement stops.

(width). Each potential seen represents the sum of the depolarization potentials of all the muscle fibers of a single motor neuron.

Step IV: The patient is asked gradually to increase the strength of contraction to maximum. As he does so, the rate of firing of each motor unit increases to about 40-50 times per second, and additional motor units begin to fire. Normally the smaller motor units—i.e., those with the fewest muscle fibers per neuron—are used in weak contractions, and large motor units are used for strong contractions. Thus, with maximum contraction we see many motor units firing at rapid rates, some units having 1500-2500 microvolt potentials. This produces a blur on the screen called the normal interference pattern (Figure 4 D).

THE ELECTROMYOGRAM IN DISEASES OF THE LOWER MOTOR NEURON

Diseases of the lower motor neuron—i.e., the anterior horn cell or axon—result in a functional loss of entire motor units. The muscle fibers supplied by the affected neuron are no longer under voluntary control. When actual Wallerian degen-



NORMAL EMG

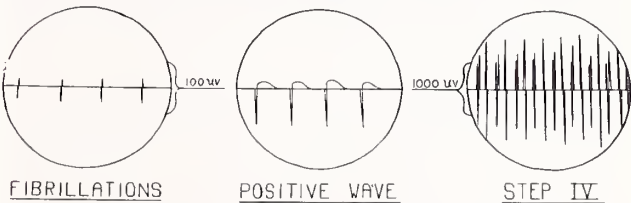
Figure 4. The Normal EMG. C—Step III—A few normal triphasic (a) and diphasic (b) voluntary motor unit action potentials are produced during a minimal effort. D—Step IV—The normal interference pattern produced during a strong contraction; note the calibration in microvolts.

eration has occurred, muscle fibers respond to such denervation with an 18-21 day period of inactivity, followed by a prolonged period (often years) during which they contract individually in response to circulating acetyl-choline, mechanical stimulation or heat. This contraction of individual denervated muscle fibers is called fibrillation. Since single muscle fibers are involved, such contractions are not visible through the skin. (The involuntary twitchings of muscles that are visible are fasciculations. These represent synchronous discharges of an entire motor unit due to various causes such as irritation of the nerve trunk or increased muscle irritability.)

When a denervated muscle is tested, the following are noted:

Step I: When the electrode is inserted into the resting muscle during the first 18-21 days following Wallerian degeneration, no electrical activity is seen. However, after this period of inactivity the denervated muscle fibers start to fibrillate. These fibrillations produce tiny (25-125 microvolt) potentials of very short duration ($\frac{1}{2}$ to 2 milliseconds), which occur at regular intervals 2-10 times per second (Figure 5). Because of their short duration, they have a high-pitched crackling sound easily recognized through the loudspeaker. The presence of such potentials indicates denervation.

Step II: The electrode is moved slightly. If it is



NEUROPATHIC EMG

Figure 5. The Neuropathic EMG. Typical Positive Wave and Fibrillation potentials are shown. Note the calibration of the neuropathic interference pattern, and the "spaces" that are not filled due to loss of neurons. Compare with the normal interference pattern in Figure 4-D.

in an area of denervated muscle, this mechanical stimulation increases the amount of fibrillation or causes it to begin if none is "spontaneously" occurring. Another type of abnormal potential that is frequently induced in denervated muscle by needle movement is the "positive wave." This consists of a sharp downward (positive) deflection and a shallow negative recovery phase, which usually occur in series (Figure 5). These are indicative only of increased muscle irritability and are a sign that there probably is pathology present, but they are not diagnostic of any particular neuromuscular disease. Occasional positive waves may occur in normal muscle.

Step III: Effort by the patient to produce a slight contraction will result in *no* voluntary motor unit action potentials if there is total denervation, as in peripheral nerve severance, for example. If there is partial denervation, this step will be normal except that larger motor units may be recruited early.

Step IV: If complete denervation exists, effort to produce a maximum contraction would again result in no motor unit action potentials being seen. If partial denervation exists, a characteristic pattern appears (Figure 5). The interference pattern shows "holes" or spaces between potentials, in comparison with the normal interference pattern (compare with Figure 4). This occurs because fewer than the normal number of functioning motor units are present in the area of the electrode. Those units that are undamaged discharge at the normal rapid rate and have normal configurations.

It is essential, of course, to test various muscles so that a pattern of involvement is established. For example, unilateral involvement of the biceps, deltoid, supraspinatus and rhomboids indicates a fifth cervical nerve root lesion, whereas involvement of the deltoid and teres minor alone would suggest an axillary nerve problem. Thus the dis-

tribution of involvement will indicate a diffuse disease process or will localize it to peripheral nerves, nerve roots, areas of the plexuses, etc. and thus be of great assistance in diagnosis.

In cases of peripheral nerve injury where there is a question of nerve continuity, electrodiagnosis can be of help by detecting minimal voluntary activity in the supplied muscles (indicating continuity). Neuropraxia can often be differentiated from Wallerian degeneration after several days if one stimulates the affected nerve distal to the lesion, and produces a muscle response in the case of neuropraxia. Strength-duration curves are also helpful at this stage. After 18-21 days, fibrillation potentials will be seen in the case of Wallerian degeneration, but not in neuropraxia. In cases of peripheral nerve regeneration, early regeneration potentials can usually be seen on the electromyogram several weeks before muscle function is detectable clinically.

THE ELECTROMYOGRAM IN MUSCLE FIBER DISEASE

In primary muscle diseases such as muscular dystrophy, polymyositis, dermatomyositis, and the metabolic myopathies, distinctly different results are obtained, for the pathology consists of a loss of muscle fibers rather than of neurons. Thus the motor units become "smaller." As muscle fibers die, each lower motor neuron supplies fewer muscle fibers. This causes the potentials to become smaller—often only 300-600 microvolts in height.

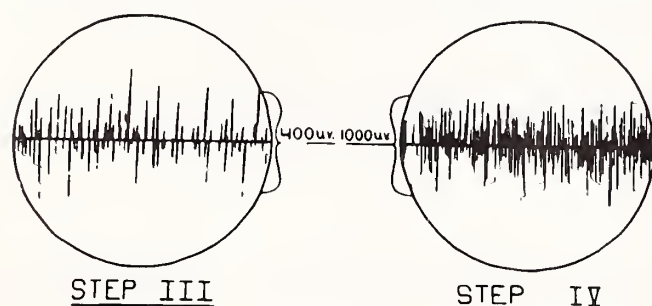
When the needle electrode is inserted into resting muscle (Step I) no activity is noted.

In Step II, movement of the needle *usually* is followed by electrical silence, as in normal muscle. However, positive waves are noted in some cases of myopathy, and infrequently a few fibrillation potentials may be elicited. It has been postulated that these fibrillation potentials are due to functional denervation produced by loss of the neuromuscular junction as the first step in muscle-fiber necrosis, occurring while the rest of the fiber is still capable of contraction. Fibrillation potentials are particularly common in polymyositis.

In Step III, when a minimal voluntary contraction is attempted, we find that an inordinately high *number* of motor unit action potentials appear (Figure 6). This characteristic finding occurs because the loss of many of the muscle fibers of each motor unit necessitates the use of more than the normal number of motor units for a given strength of contraction.

Attempts at strong voluntary contraction result in the production of an interference pattern characterized by a decreased height of all potentials (loss of muscle fibers in each motor unit) with a normal number of motor units (no loss of neurons). See Figure 6, and compare with Figures 4 and 5.

In neuromuscular junction diseases such as myasthenia gravis, the electromyogram will show abnormalities typical of myopathy. Using a pickup electrode over an affected muscle and stimulating



MYOPATHIC EMG

Figure 6. The Myopathic EMG. Step III—Note the increased number of small voluntary motor unit action potentials necessary for a minimal effort. Step IV—Note the small size of the voluntary potentials seen during a maximum contraction (the myopathic interference pattern). Note that the calibration is the same as shown for the normal and neuropathic interference patterns in Figure 4-D and Figure 5.

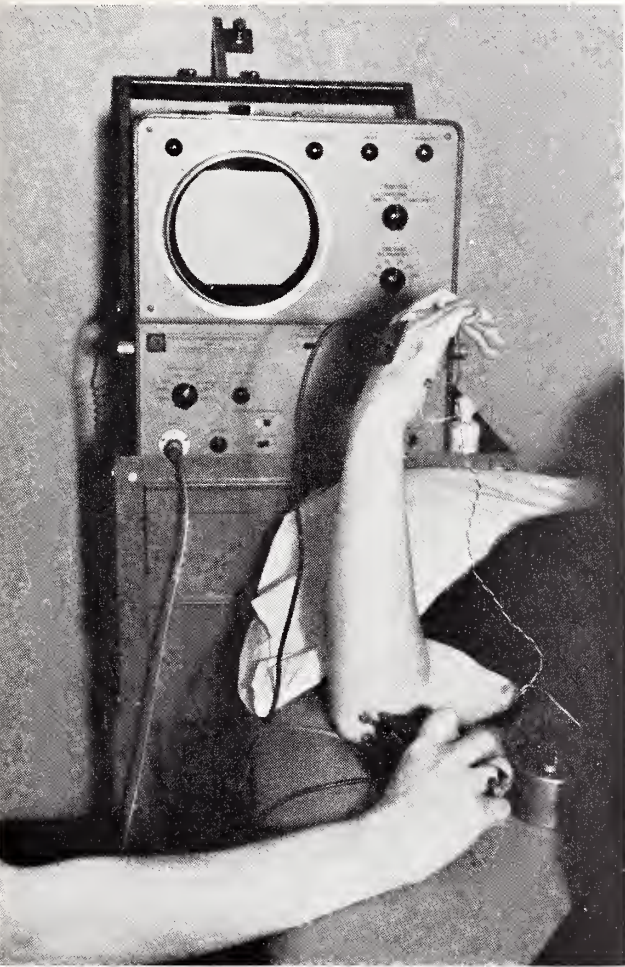


Figure 7. Motor Nerve Conduction Velocity Determination. The ulnar nerve is being stimulated at the elbow with the pickup electrode over the muscles of the hypothenar eminence.

its motor nerve repetitively at 3-10 times per second will result in a gradual decrease in the height of the muscle response as fibers with fatigued myoneural junctions stop responding.

It should be readily appreciated from the foregoing discussion that electromyography is by far the most refined technic available for the detection of motor unit disease, providing information that the other tests cannot give regarding the differential diagnosis of muscle fiber disease from lower motor-neuron disease.

The test should be performed only by a physician with a background of neuromuscular anatomy and physiology and a knowledge of neuromuscular disease. A prolonged period of training in the performance of the test and its evaluation is a prerequisite for reliable interpretation.

MOTOR NERVE CONDUCTION VELOCITY DETERMINATION^{5, 7}

None of the previously described tests is capable of differentiating anterior horn cell disease from disease of the axon. Once the disease is localized to the lower motor neuron, the detection of a decreased rate of impulse propagation along periph-

eral motor nerve trunks *can* localize the disease process to the axon.

In performing this test, one fixes a small surface pickup electrode over a distal muscle supplied by the nerve to be tested. For example, in testing the ulnar nerve, he would use the hypothenar eminence (Figure 7). A stimulating electrode is then applied to the nerve trunk proximally (for example at the elbow), and the time lapse between stimulation and muscle fiber discharge is noted on the oscilloscope (Figure 8—upper tracing). This

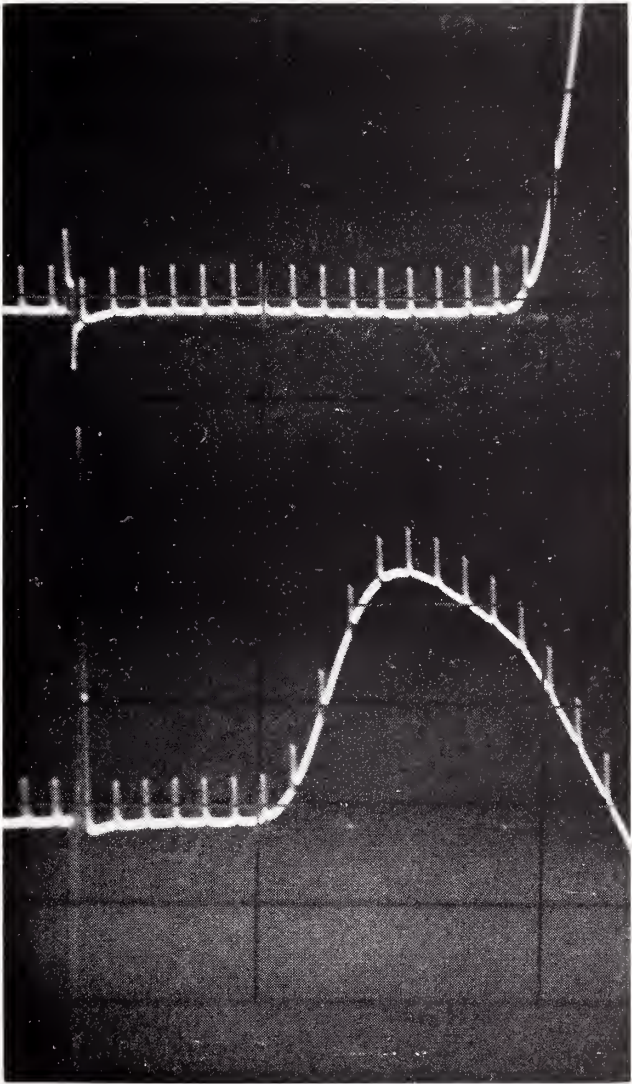


Figure 8. Photograph of the oscilloscope tracings obtained from the subject in Figure 7. The upper tracing is the result of stimulating the ulnar nerve at the elbow. Time markers occur every 1/2 millisecond. The stimulus artifact, which occurs at the time of nerve stimulation, is seen between the second and third time markers at the left side of the tracing, and the muscle response is seen as a sharp upward deflection at the right. Time lapse, stimulus to response is 7.5 msec. Time lapse from stimulus at the wrist (lower tracing) to response is 3.0 msec. Thus 4.5 msec. (7.5 minus 3.0) is the time the impulse takes to travel from the elbow site of stimulation to wrist site of stimulation. This distance measures 255 millimeters. Thus 255 mm. divided by 4.5 msec. will give the rate of impulse propagation: 57 mm. per msec. or 57 meters per second (Normal is 45-70 M/sec.).

stimulus is then applied to the ulnar nerve at the wrist, and the time lapse from stimulation to muscle response is again noted. It is of course shorter, since less distance is traveled. If we then subtract this time lapse from the first time lapse, we obtain the time the impulse took to travel from the proximal point of stimulation to the distal point of stimulation. In order to get the actual rate of conduction, we then measure the distance between these two points and divide it by the time lapse, getting an answer in millimeters per millisecond or meters per second.

The normal rate of conduction for the peroneal, median and posterior tibial nerves is 40-65 meters per second, and for the ulnar it is 45-70 meters per second. These rates of conduction are normally reached by two years of age.⁵

It has been shown that the rates of conduction are normal in anterior horn cell diseases such as polio, amyotrophic lateral sclerosis or syringomyelia, but are *decreased* in peripheral neuropathies such as Guillain-Barré, Charcot-Marie-Tooth, diabetic neuropathy, median-nerve compression in the carpal tunnel, etc.

ILLUSTRATIVE CASE STUDIES

1. A nine-year-old boy was seen in the orthopedic clinic for an acute, mild left-lateral ankle sprain. On questioning, it was found that he had "turned" both ankles several times in the past. After his sprain healed, it was found that there was mild hypesthesia of the dorsum of the right foot. The left peroneal muscles were slightly weaker than the right, although strength was fair-plus to good bilaterally.

The electromyogram showed positive waves in the left peroneal muscles. The nerve conduction velocity in the peroneal nerve was 29 meters per second on the left, and 19 meters per second on the right (Normal: 40-65 meters per second), indicating axonal disease.

There was no evidence of diabetes, vitamin deficiency or heavy-metal poisoning, nor was there a family history suggestive of Charcot-Marie-Tooth disease. It was therefore felt that the patient probably had had a mild infectious polyneuritis in early childhood. One-eighth-inch lateral sole wedges were prescribed to place his ankles in a more stable position.

2. A 42-year-old man was seen because of a gradual weight loss of 20 pounds in six months, associated with mild weakness of the arms and an unsteady gait. He was found to have mild, generalized muscle weakness, but an otherwise normal neurologic examination. Electromyography disclosed that the voluntary motor unit action potentials were of short duration and low amplitude (a myopathic interference pattern). There were many polyphasic potentials, and many muscles showed fibrillation potentials. These findings were most marked in the sacrospinalis, deltoids, and gluteal muscles. Biopsy of the deltoid revealed primary

muscle degeneration with phagocytosis. A diagnosis of polymyositis was made. No evidence of malignancy was found (polymyositis is frequently associated with carcinoma). The patient was treated with prednisone, and experienced slight improvement over the next six months.

3. A 32-year-old truck driver was seen because of persistent total loss of muscle function and sensation in the left forearm and hand since his truck overturned in an accident five weeks before examination. In addition there was mild but varying weakness of the upper arm and shoulder muscles. Reflexes were depressed.

Electromyography showed a few normal-appearing motor units in each of the eight muscles tested in the left forearm and hand, with no positive waves or fibrillation potentials. Electric stimulation of the median and ulnar nerves produced prompt contraction in the appropriate muscles of the hand and forearm.

The diagnosis of conversion reaction or malingering was made.

4. A 29-year-old male complained of almost constant mid-line and right low back pain with occasional sciatic radiation for two months. Deep-tendon reflexes and sensation were normal. There was questionable weakness of the right gastrocnemius-soleus. Straight-leg-raising was 80 degrees on the left and 70 degrees on the right.

The electromyogram demonstrated positive waves and/or 1+ fibrillation potentials in the right extensor digitorum brevis, in the right medial gastrocnemius and in the right sacrospinalis at the fifth lumbar and first sacral levels. The diagnosis of right fifth lumbar nerve-root irritation was made. Laminectomy revealed a herniated disc with root compression at that level.

5. A 19-month-old male infant was seen because he did not sit or stand. He had generalized hypotonia and only traces of deep-tendon reflexes. All lower-extremity muscles were weak. The shoulder muscles were not anti-gravity, but the hand and forearm muscles were functional. No contractures were noted.

The electromyogram showed 2+ to 3+ fibrillation potentials in most upper- and lower-extremity muscles, with a neuropathic interference pattern. Nerve-conduction velocity was normal, indicating anterior horn cell disease. The diagnosis of progressive spinal atrophy of infancy (Werdnig-Hoffmann disease) was made. At the age of 45 months, a tracheostomy was necessary because he had difficulty handling secretions, and his muscle power continued to decline. He died at age 5.

SUMMARY

Electrodiagnosis can aid the clinician in the differential diagnosis of diseases of the motor unit by localizing the disease process to the anterior horn cell, axon, neuro-muscular junction or muscle fiber.

The disease can be further determined to be

generalized (for example, amyotrophic lateral sclerosis, Guillain-Barré, muscular dystrophy) or localized (for example, root-compression syndromes or peripheral-nerve lesions).

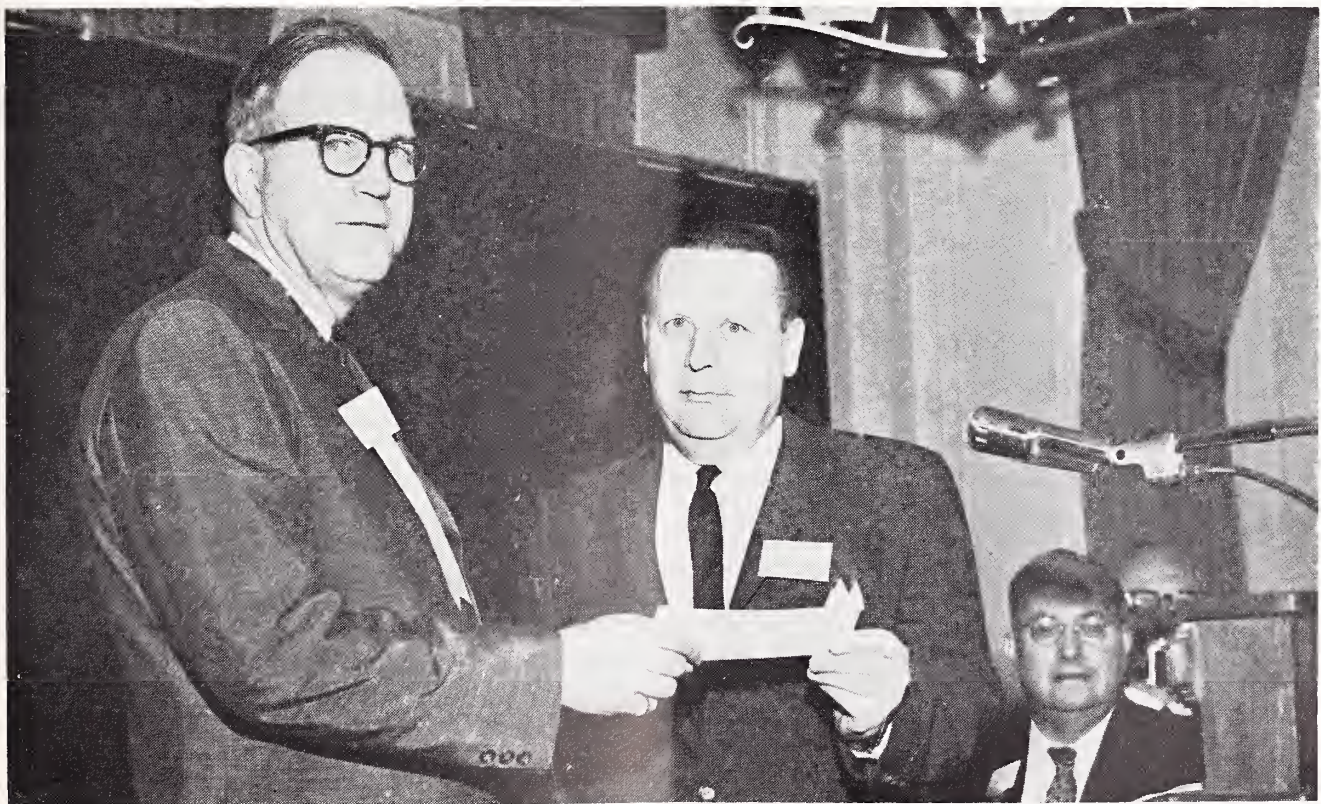
These technics are applicable to infants and children as well as to adults, and in fact are of great help in young patients in whom adequate clinical evaluation is more difficult.^{3, 4}

Such studies may be indicated whenever muscle weakness is found or nerve damage is suspected and the diagnosis is in doubt.

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A check for \$15,375.50 was given to the State University of Iowa College of Medicine by the American Medical Association Educational Research Foundation at the IMS annual meeting in April. Dr. S. P. Leinbach (left), chairman of the Society's board of trustees, is shown here as he made the presentation to Dean Robert C. Hardin, who accepted the gift on behalf of the College of Medicine. Most of the money was contributed by Iowa physicians. (Dr. R. F. Birge, secretary of the Society, is seated at the far right.)

Some Background Material for an Understanding of the Serologic Test for Syphilis and the Biologic False Positive*

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I WAS STIMULATED to select this subject for presentation when my help was asked in evaluating an ambiguous serology report on a patient. A battery of tests indicated inconsistent findings. One test was reactive, but another test was not. Did the patient have syphilis, or didn't he? Was treatment indicated? Were we confronted with a so-called "biologic false positive"? If so, what did it portend?

To interpret these findings—to understand the seeming vagaries of these tests—it is necessary to recall some basic immunologic facts and hypotheses.¹ Bacteria are bundles of antigens.¹ The ability of an antigen to stimulate antibody production depends upon its mass, its chemistry, its spatial configuration and other factors. Substances may become antigenic when combined with haptens, and the resulting antibody will react with the hapten itself. Some antigens are good stimulators, and others within the same bacterium are poor stimulators of antibody production. Some antigens repress others.

We once thought that it was antigen from an exogenous source which stimulated antibody formation in a host. In some experiments, however, it has been shown that after a prenatal acquaintance with a foreign antigen, an animal may fail to react to this foreign antigen postnatally. There are also auto-immune phenomena, with the development of auto-immune antibodies. The hypothesis of self-recognition—that an individual will not react against substances indigenous to him—is no longer tenable. Experiments have shown, and certain diseases such as chronic thyroiditis now indicate, that under certain conditions autologous antigens may be so altered that an individual will react against his own lens, his own testicles, thyroid, and adrenal.² There are species-specific antigens, and there are antigens common to many

species. In the *Treponema pallidum* for example, among other antigens³ two have been clearly differentiated. The soluble protein fraction is the species-specific antigen. This one, when injected into a suitable animal, stimulates the development of antibodies which are to some degree protective. Parenthetically, although there are the usual antibodies which destroy the activity of the antigen, there are others which will react with the antigen but will not destroy its activity at all. The other antigen in the spirochete—a common antigen—is the lipoidal one. This lipoidal antigen is found in other bacteria, in the living tissue of animals and in some plants. It stimulates the production of antibodies in man, but since these are non-specific, they have been called reagins to distinguish them from specific antibodies. Recall that reagins in low titer are found in normal human beings. They are increased in titer in the course of many diseases other than syphilis—in malaria, in leprosy, in febrile conditions, following smallpox vaccination, in pregnancy, in narcotic addiction and in any disturbed metabolic condition.⁴

These reactions are all biologic phenomena—reactions of the host to the antigen. They indicate presence or absence of reagin, not presence or absence of syphilis. Yet in these tests it has become the custom to speak of the reaction to antigens other than syphilis as "biological false positive (BFP)." There may be no syphilis, but there is nothing false about the reaction. It is just that the BFP reactor produces a substance similar to or identical with the reagin produced by syphilis.

When the reagin disappears spontaneously within three to six months, in the above-mentioned conditions other than syphilis, the reaction is termed "an acute BFP"; and as in systemic lupus erythematosus, where the reagin may remain longer than six months or even for life, the reaction is called "a chronic BFP."

In syphilis, it is hypothesized that the spirochete damages the tissues of the host, releases the lipid phospholipid, which is a substance identical with a fraction of the spirochete itself, and combines with this lipoidal substance, as hapten, to stimulate reagin production. Many different antibodies or reagins follow infection with syphilis. The an-

* Read before the Medical Study Club, Des Moines, Oct. 15, 1962.

tigen in each test for syphilis evokes an antibody responsive to it.

Slight differences in chemistry arouse differences in antibody response. This is one reason for the differences in readings that result from different tests on the same blood serum sample. If one is to compare tests, therefore, each test must be very accurately standardized. The standard tests detect reagin within three to six weeks after infection; the treponemal tests reveal the antibody after six to ten weeks. The patterns of development vary from antibody to antibody. The ability to detect antibody or reagin in syphilis depends not only upon the test used and upon how long the infection has persisted when the test is performed, but also upon whether or not the patient has been treated, upon the time during the course of the infection when the treatment was administered, and upon the amount of treatment he was given. Electrophoresis¹ demonstrates that the Wassermann reagin is concentrated in the slow-moving gamma globulin; that the *Treponema pallidum* immobilization antibody is found in the fast-moving gamma globulin; and that the agglutination antibody is distributed in more than one fraction, suggesting more than one antibody. Except for their ability to react with specific antigens, antibody globulins show no chemically recognizable differences from normal globulins.

Let us not forget, therefore, that these tests are laboratory procedures, of greater or lesser difficulty of performance, and subject to more or less error.⁵ The test may be performed on an individual before antibodies have had time to develop, or after his antibodies have vanished. The laboratory procedure is an aid to diagnosis, and not a substitute for all the factors involved in making a diagnosis. Since normal individuals sometimes have reagin autochthonously, the fact that an animal or man has antibodies which react with a specific organism merely suggests that the host may have been infected by that agent.

A SPECIFIC TEST HASN'T YET BEEN DEvised

Bordet and Gengou¹ discovered the complement fixation reaction in about 1898. Wassermann, Neisser and Bruck⁶ applied it to syphilis, using the extract of syphilitic livers of stillborn infants. At the time, it was thought to be a specific test—i.e., those who reacted to it had syphilis, and those who did not, did not have syphilis. This concept was negated when Marie and Levaditi found that extracts of normal livers were equally good antigens for determining the presence of syphilis in the serums of patients. They were followed by Porges and Meier, who showed that beef heart was a good source of antigen. Thus it was discovered that the tests were not specific ones, as performed up to that time, and that the tests had the seed of the so-called "biologic false positive" reaction.

Along with these observations, individuals were found, as stated before, who though free of syph-

ilis, produced reactive test results. Since a specific treponemal test was not available, increasing efforts were exerted to develop a more sensitive reagin test, to include all individuals with syphilis, while at the same time remaining specific⁷—i.e., excluding all those who did not have syphilis. They culminated in 1942, when Pangborn⁶ introduced the phospholipid cardiolipin additionally sensitized with cholesterol and lecithin as antigen. This is the antigen used in the VDRL test, which is the most commonly used test today, and which has a very high index of specificity and sensitivity.

Other complement fixation procedures such as flocculation, and agglutination had been developed. In this procession⁷ you will recall the names of Kolmer, Kline, Hinton, Mazzini, Rein-Bozzak and Eagle. These tests are all non-specific. They measure a reagin which is not a protective antibody, produced by an antigen which is not a specific antigen; yet this reagin is produced by practically every patient who becomes infected with syphilis, so that paradoxically a reactive serology indicates syphilis with a very high degree of accuracy.

With the advent of penicillin and the seeming conquest of syphilis, the finding of a positive serology took on an increased importance. With a smaller incidence of primary and secondary syphilis, the ratio of BFP's to latent syphilis cases increased. Theoretically a treponemal antigen could solve the problem.

In 1947, while attempting to culture the *Treponema pallidum* *in vitro*, Nelson⁷ discovered the immobilizing antibody, and devised the *Treponema pallidum* immobilization test⁸ (TPI). In this test, the antigen is the etiologic agent itself, and the antibody is a specific one which reacts with the etiologic agent. But even that test does not solve the problem. It not only gives cross reactions with other spirochetal diseases but also has some other shortcomings. The antibodies do not appear in the serum until about six weeks after infection; antibodies may be present for six months in the blood of an infant who has been uninfected by its adequately-treated mother; and no antibodies have been found in a number of cases of late *tabes dorsalis*.

The TPI test requires living organisms; it is very difficult to perform; and it is very expensive. Other tests have been devised which circumvent these objections.⁹ Reiter developed a non-virulent treponeme which is easily grown *in vitro*. From this, D'Allesandro extracted an antigen which is used in the Reiter protein complement fixation test (RPCF).¹⁰ The multiplicity of tests which have evolved is quite confusing.⁹ Yet I should mention two more which may be destined to become prominent: the fluorescent treponemal antibody test (FTA),¹¹ following the work of Coons, of Harvard; and the rapid plasma reagin test (RPR),¹² by Portnoy-Bossak. The latter utilizes unheated serum or plasma, which was not possible previously; it decreases time, personnel, and tech-

nical equipment requirements; and the test results are available in ten minutes. It is more sensitive than the standard reagin tests (VDRL), but it loses none of their specificity.

Note that reagin, and the TPI and RPCF test antibodies are all different immunologic host responses. There is a variability in the time of appearance of these antibodies after infection, and in their course during the natural history of syphilis. The VDRL test becomes positive about four to six weeks after infection; the TPI test in six to 10 weeks. If treatment is instituted early, the patient may never become sero-positive to either test. If treatment is given late, the reagin test usually declines gradually, but may remain at a low titer, and the TPI remains positive for a long time, although it too may ultimately become negative. This may happen also without any treatment. The incubation period for an acute BFP, in a disease or illness which may give rise to it, is often seven to 21 days; it becomes negative in about three to six months. Drugs¹³ may give rise to a BFP. At this point, it is well to recall that during therapy for essential hypertension with hydralazine hydrochloride (Apresoline),⁴ this drug causes not only a positive L.E. test, but also a BFP. Finally, a "chronic BFP," as in L.E., may indicate an abnormality of the immunologic apparatus, perhaps an auto-immune disease. Considering the above variables, the conclusion is inevitable that these tests indicate the immunologic status of the individual with special regard to the response to the antigen used in the test.

There has been a recrudescence^{9, 14, 15, 23} of syphilis in the last few years (since 1955-56). The use of penicillin for gonorrhea and other diseases has camouflaged but has not eliminated many cases of syphilis. Making an accurate diagnosis, therefore, is increasingly important.

The Serology Evaluation and Research Assembly (SERA),^{5, 17} in which 38 laboratories participated, concluded: "The results of the evaluation do not support the assumption that treponemal and Reiter protein tests are especially valuable in distinguishing a syphilitic specimen from a BFP, or that they are much better for this purpose than the non-treponemal test."

SOME PRACTICAL SUGGESTIONS

What procedures, then, offer a practical method of differentiating between syphilis and a BFP? Carpenter and Miller in the *NEW ENGLAND JOURNAL*,¹⁸ and Knox and Moore in the *SOUTHERN MEDICAL JOURNAL*¹⁹ have proposed similar methods. The first determination is made with a standard reagin test, e.g., the VDRL.²⁰ If this is non-reactive, it excludes syphilis as well as any serologic test can do it. In patients in whom the clinical and epidemiologic findings do not oppose the diagnosis of syphilis, this test indicates syphilis with a high degree of reliability. If the patient is reactive when clinical and epidemiologic considera-

tions do oppose the diagnosis, the physician should perform whichever treponemal antigen test is most readily available and least expensive, such as the RPCF. If they both produce reactions, then syphilis, past or present, is indicated. If the VDRL test is positive and the RPCF is negative, the patient has either a BFP or a case of very early syphilis, previously treated syphilis, or syphilis of long duration. Then one should have a PTI done. A reactive test usually indicates past or present, syphilis, and a non-reactive test indicates either that syphilis is not present, that the previous test result was a BFP, or that the patient has very early syphilis.

SUMMARY

To summarize: No serologic test is pathognomonic for syphilis.²¹ There is no single serologic test for syphilis that is sufficiently sensitive to detect every stage of the disease and which is, at the same time, specific for syphilis. Therefore, one is misguided if he thinks that a positive PTI means syphilis and that a negative TPI means no syphilis. Rather, such findings inform us of the immunologic status of the patient in relation to the antibody being tested.

The laboratory cannot substitute for knowledge. The physician must know syphilis. He must take a good history, and do a complete physical examination and he must check both against the epidemiologic background.

He must understand the limitations of the serologic tests that have been done. A darkfield is still the best test for *establishing* primary syphilis, and yet, the serologic test for syphilis is unchallenged as the most effective device in *screening* for syphilis.

The STS, although a non-specific test, paradoxically is still one of the most accurate laboratory procedures in its ability to indicate the presence of syphilis. It is unjustifiable, however, to make a diagnosis of syphilis on the basis of a single specimen.²²

Because of the reversal of the downward trend in syphilis, we must think first of syphilis if there is a reactive serology. Whereas it used to be easy to diagnose syphilis but very difficult to treat it, now it is hard to diagnose, but easy to treat the disease.⁶ If the decision is a BFP, it indicates conditions in which prognosis is more grave, often necessitating lengthy, detailed, and repeated investigation to arrive at a diagnosis.

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Four of the fourteen Iowa physicians who were honored, in April, for 50 or more years of practice, attended the annual banquet and are shown here after they were awarded life memberships in the Society. Standing, left to right front, are: Harold A. Spilman, M.D., Ottumwa; Gerald V. Caughlan, M.D., Council Bluffs; Thomas L. Vineyard, M.D., Ottumwa; and T. F. Thornton, Sr., M.D., Waterloo. Also honored, but not pictured, were Clyde E. Thomas, M.D., Keystone; Carl L. Bradley, M.D., Newhall; Thomas R. Campbell, M.D., Sioux Rapids; Ezra L. Wurtzer, M.D., Clear Lake; Jesse L. Saar, M.D., Donnellson; William E. Ash, M.D., Council Bluffs; David R. Ingraham, M.D., Sewal; John R. Christensen, M.D., Eagle Grove; and Drs. Albert J. Joynt and Ralph E. Russell, both of Waterloo. (Also shown in the picture are Earl Nightingale (far left), the banquet speaker; G. H. Scanlon, M.D. (center), immediate past-president; and Dr. S. P. Leinbach (far right)).

The Miniature X-Ray

As A Case-Finding Technic

For Heart Disease and Carcinoma of the Lung in Iowa

JASON B. LIPKIND, M.D.
Des Moines

IN THE FEBRUARY, 1961, issue of the JOURNAL OF CHRONIC DISEASES, W. B. Thompson, M.D., and associates* reported on a study of cardiovascular-disease screening by means of miniature x-rays, and reviewed the literature on that subject. They came to the conclusion that the chest x-ray can be used effectively for case finding of cardiovascular disease in adult populations.

The Iowa State Department of Health and the Iowa Tuberculosis and Health Association maintain three mobile x-ray units, which take about 70,000 photofluorograms a year. Besides facilitating the follow-up of all persons in whom tuberculosis is suspected, these agencies send letters to all persons whose films are suspicious either for heart disease or for carcinoma of the lung, urging that they report to their physicians for further diagnostic testing. The physician, in each instance, is likewise notified of the findings.

To ascertain the value of the photofluorogram in detecting heart disease and lung cancer here in Iowa, all of the people whose films, between March 1, 1961, and February 28, 1962, had suggested heart disease or lung cancer were made the subjects of a study. A questionnaire was sent to the physician to whom each of them had been referred, asking (1) whether the patient had come to him for further studies, and (2) what had been his findings.

This study was not meant to be an evaluation of the photofluorogram program as a whole, for it did not cover the follow-up of patients with reported tuberculosis in various stages, hilar node calcification, pneumonitis, increased bronchovas-

cular markings, emphysema or abnormal aortas, all of which are reported to the respective patients' physicians.

FOLLOW-UP OF SUSPECTED HEART DISEASE

From March 1, 1961, through February 28, 1962, a total of 70,640 photofluorograms had been taken, and in the opinion of the radiologist who read the x-rays, 942 (1.3 per cent) of them had contained evidence of heart abnormalities. Nine hundred thirty-three questionnaires were sent out regarding those 942 patients, and 738 (79 per cent) of them have been returned. However, 108 of the returned questionnaires have indicated no follow-up by the patient. Thus, only 630 (67 per cent) of the 942 persons tentatively diagnosed as having abnormal heart conditions had been followed up.

TABLE I
PHYSICIANS' REPLIES TO QUESTIONNAIRE
REGARDING PERSONS REFERRED FOR STUDY
OF SUSPECTED HEART ABNORMALITIES

	Patients	
	Number	Per Cent
No follow-up questionnaire sent	9	1
Questionnaire sent but not returned by doctor	195	21
Questionnaire reported that patient did not have follow-up	108	11
Questionnaire was returned with follow-up information	630	67
Totals	942	100

Of those 630 patients who had follow-up, 487 (77 per cent) had previously-recognized heart disease without evidence of deterioration; 43 (7 per cent) were diagnosed as heart-disease cases for the first time as a result of referral from the x-ray program; 31 (5 per cent) showed first evidence of deterioration of a previously-known heart condition; and 69 (11 per cent) were reported as having no heart disease.

Dr. Lipkind is director of the Division of Gerontology and Chronic Diseases in the Iowa State Department of Health, and on loan from the U. S. Public Health Service.
* Thompson, W. B., Hudnut, H. B., Jr., Russo, P. E., Brown, F. R., and Mosley, K. T.: Study of cardiovascular disease screening with miniature chest x-ray. J. CHRON. DIS., 13:148-160, (Feb.) 1961.

TABLE 2
REPORTED RESULTS OF HEART DISEASE
FOLLOW-UP STUDIES

	Patients	
	Number	Per Cent
Heart disease not confirmed	69	11
Heart disease confirmed	561	89
Totals	630	100

TABLE 3
BREAK-DOWN OF CONFIRMED
HEART-DISEASE CASES

	Patients	
	Number	Per Cent
Known heart-disease condition unchanged ..	487	77
Known heart-disease condition deteriorated .	31	5
New heart disease	43	7
Totals	561	89

Table 1 shows that 312 patients were lost to follow-up. If one can assume that the follow-up findings in that group would have been proportional to the actual follow-up findings reported in Table 3, then there would have been 47 cases with first evidence of deteriorated known disease, and 66 new cases among the 942 whose x-rays were interpreted as showing abnormal hearts.

With these figures, the case-finding percentages would have been:

$$\frac{66}{70,640} = .094 \text{ per cent (94 cases per 100,000 x-rays)}$$

—new cases

$$\frac{47}{70,640} = .066 \text{ per cent (66 cases per 100,000 x-rays)}$$

—deteriorated cases.

FOLLOW-UP OF SUSPECTED LUNG CANCER

Possible malignancy, coin lesions or mediastinal

TABLE 4
PHYSICIANS' REPLIES TO QUESTIONNAIRES
REGARDING PERSONS REFERRED FOR STUDY OF
SUSPECTED LUNG CANCER

	Patients	
	Number	Per Cent
Questionnaire sent but not returned	20	15
Questionnaire reported that patient did not have a follow-up	18	13
Questionnaire was returned with follow-up information	97	72
Totals	135	100

masses had been suspected in the lungs of 135 people, on the basis of the x-rays taken during the study period. Of the questionnaires mailed regarding these 135 people, a total of 115 (85 per cent) have been returned. Of the 115 returned questionnaires, 18 have indicated no follow-up. Thus, 97 persons were followed up; 28 of them (29 per

TABLE 5
REPORTED RESULTS OF FOLLOW-UP OF
POSSIBLE LUNG CANCER CASES

	Patients	
	Number	Per Cent
Abnormal findings not confirmed	14	14
Abnormal findings confirmed	83	86
Totals	97	100

cent) had new disease; and 14 (14 per cent) were reported as having no disease (Tables 4, 5 and 6).

Besides lung carcinoma, the new diagnoses that the physicians had made included one lymphoma, two substernal goiters, one neurofibroma, one ganglioneuroma, one aneurysm, one "fibroid tu-

TABLE 6
BREAK-DOWN OF CONFIRMED LESIONS
IN PATIENTS WITH X-RAY EVIDENCE
SUGGESTING CANCER OF THE LUNG

	Patients	
	Number	Per Cent
Known abnormality (benign)	54	56
New diagnosis other than carcinoma	23	24
New lung carcinoma	6	6
Totals	83	86

mor," and 15 benign "coin lesions." In one case, the physician wasn't yet ready to commit himself.

SUMMARY

A survey was made to determine the effectiveness of the photofluorogram program as a case-finding technic for heart disease and lung cancer.

In a one-year period, during which 70,640 x-rays were taken, 942 patients were referred to physicians for suspected heart disease, and 630 of them were followed up. Forty-three of them had new heart disease, and 31 had the first evidence of deterioration of known heart disease.

Of 135 having possible evidence of lung carcinoma, on the basis of x-ray findings, 97 were followed up, and six were newly diagnosed as having cancer of the lung.

Histoplasmin Skin Testing at An Iowa Mental Hospital

HANS S. FRENKEL, M.D.

Clarinda

NUMEROUS HISTOPLASMIN skin-testing programs have been reported during the past several years. The percentage of positive skin reactions to histoplasmosis has varied in different areas, from 21 per cent found by Furcolow in Missouri to as high as 85.6 per cent found by Zeidberg in a Tennessee survey. Recent studies have shown that histoplasmosis is as common in the Middle Atlantic states as in the Middle Western United States, where it is known to be endemic.

A recheck of some of the old inmates of the Clarinda Mental Health Institute—ones who supposedly had had tuberculosis at one time or another—revealed that a considerable number had roentgenologic evidence of pulmonary calcification compatible with histoplasmosis. Since the literature provided no information on the incidence of histoplasmin reactions in a mental institute either in Iowa or elsewhere in the United States, it was decided to skin test the population of the Clarinda hospital *in toto*. The patients at this institution come from the southwestern counties of Iowa, including the City of Des Moines and the rest of Polk County. Many of them have been in the institution for the greater part of their lives.

At the time of the testing program, there were 1,131 patients in the hospital, and of these 680 were females and 451 were males. To each patient, 0.1 ml. of freshly-prepared histoplasmin was administered intracutaneously, by means of a new tuberculin syringe and disposable needle, into the flexor side of the forearm. The skin reactions were read 48 hrs. later, and were recorded in millimeters. Of the 1,131 patients tested, 458 (40.4 per cent) showed positive reactions. The 451 male patients included 208 positive reactors (46.1 per cent), and the 680 female patients included 250 positive reactors (36.7 per cent).

The positive reactors were given complement fixation tests for histoplasmosis, and four of the total group had positive reactions in dilutions

from 1:8 to 1:64. The patient with the reaction of 1:64 was R. J., a 64-year-old male who was employed in the farm operation at the institution. He had no clinical evidence of histoplasmosis, but on x-ray showed a soft coin lesion in the lower left lobe. Without any treatment, this lesion disappeared over a period of six months, and the complement fixation then returned to a negative reaction. The other three patients did not show any clinical symptoms of histoplasmosis in addition to the radiologic evidence. The complement fixation tests returned to normal within a six-month period in their cases, too.

It was impossible to find an accurate explanation for the higher percentage of positive skin reactions in the male population of the institution, but it must be assumed that because of their outside activities, the males have greater numbers of exposures to histoplasmosis than do the females.

SUMMARY

A survey of the total population of the Clarinda Mental Health Institute for histoplasmin sensitivity was carried out. Of the 1,131 patients tested, 40.4 per cent showed positive reactions. The female population had a lower percentage of reactors than did the male. Four patients showed activity, as evidenced by positive complement fixations.

ACKNOWLEDGEMENT

I wish to express my appreciation to Dr. Karl Catlin, superintendent of the Clarinda Mental Health Institute, for his permission to carry out this program.

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Dr. Frenkel is a private practitioner, and a medical consultant at the Clarinda Mental Health Institute.

New Staph Types Double After Antibiotics

Antibiotic therapy has been shown to have a significant influence on the subsequent acquisition of staphylococci, bacteria normally harbored by the body but which can cause disease.

A study involving 373 children living in a rural community in upstate New York revealed that the acquisition rates of new strains of staph doubled after antibiotic therapy, according to a report in the March 30 issue of J.A.M.A.

The study, which extended over an eight-month period, also revealed significant increases in penicillin-resistant strains after antibiotic therapy, Drs. Malcolm I. Page, Clinton Van Zandt Hawn, and Joe H. Cannon, Cooperstown, N. Y., said.

The presence of staph in the nose was determined prior to the use of antibiotics, primarily penicillin, during their use and for three months after their use, the researchers said.

The net effect of antibiotic therapy on nose carriers of staph was "a sharp reduction in the number of carriers of sensitive strains during therapy with a significant increase in carriers of resistant strains following therapy." Of 3,909 attempts to re-

cover staph from children independent of antibiotic therapy, 260 acquisitions were made, or an acquisition rate of 6.7 per 100 possibilities. Following antibiotic therapy, there were 55 acquisitions out of 415 attempts, or a rate of 13.3 per 100 possibilities.

Of the total strains acquired after antibiotic therapy, approximately 70 per cent were resistant, the researchers said. However, of 260 strains acquired independent of antibiotic therapy, only 109, or 42 per cent, were resistant, they said.

No sensitive strain of staph was observed to become resistant either during or after antibiotic therapy, according to the report.

The study also showed that new strains acquired by these children during the study did not come from members of their immediate household nor from the hospital in Cooperstown, the physicians said. One of the main reasons why the hospital was implicated undoubtedly was the absence of epidemic staph disease within the institution, they said.

Staphylococci are the cause of most of the superficial pus-forming infections in man. They have become of increasing importance in recent years because of their capacity to develop resistance to antibacterial drugs.



Pictured, as they gathered at the 1963 annual banquet, are IMS past presidents, from left to right, Harold A. Spilman, M.D., Ottumwa; Thomas F. Thornton, M.D., Waterloo; Gerald V. Caughlan, M.D., Council Bluffs; Walter D. Abbott, M.D., Des Moines; Robert N. Larimer, M.D., Sioux City; George H. Scanlon, M.D., Iowa City; Otto N. Glesne, M.D., Fort Dodge; Wendell L. Downing, M.D., LeMars; John W. Billingsley, M.D., Newton; Ben T. Whitaker, M.D., Boone; and Robert L. Parker, M.D., Des Moines.

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 59-YEAR-OLD WHITE MAN was admitted to University Hospitals with the chief complaint of severe leg pain of three weeks' duration. Twenty years before admission, he had undergone an appendectomy. Thirteen years later (seven years before admission), following an attack of severe pain in the chest and left arm, he was told that he had experienced a myocardial infarction, and was hospitalized for two weeks. Since that time, he had been a victim of angina pectoris. One year later (six years before his coming here), he was admitted to a hospital with severe pain in the chest, and was told that he had had another myocardial infarction. He was informed that the subsequent electrocardiograms did not suggest permanent heart damage, however.

Thenceforth, except for occasional angina, he had remained well and had been able to do his work as a factory laborer until five months before his admission here, when he noted some mild numbness in his left hand. This persisted, but did not become worse. Three months before admission, he began to note a swelling of the feet, which disappeared after a night's rest. The swelling became progressively worse, and he began to note weakness in both legs. About six weeks before his admission to University Hospitals, he began to have pain in both calves and in the region of the Achilles tendon. He described it as a dull, continuous, aching pain, which was unrelated to exercise. The pain became progressively more severe, and required narcotics for relief. There was neither pain in the back, nor radiation of pain into the posterior thighs. Three days before his admission, he developed a severe, steady, constant pain that tended to be localized in the right lower quadrant of the abdomen. He had no complaints referable to the gastrointestinal or central nervous systems. He had no past history of renal disease. He had not observed cloudy or dark urine and had no symptoms referable to the urinary tract.

Physical examination on admission revealed a blood pressure of 160/90 mm. Hg. The pulse was 92/min. and regular, and the temperature was 101.4°F. The patient looked acutely and chronically ill, having severe low-back, abdominal and leg

pain at the time of the examination. The head, nose and throat were normal, and there was no lymphadenopathy. Examination of the ocular fundi showed grade II hypertensive changes and an old occlusion of a small vessel in the left eye, accompanied by surrounding neovascularization. Examination of the lungs revealed decreased breath sounds, but no rales. The heart was neither enlarged nor overactive. There were no murmurs. The abdomen was soft except for some mild guarding and tenderness in the right lower quadrant. The liver, spleen and kidneys could not be felt. The bowel sounds were hypoactive. Rectal examination was normal. Pulses in the lower extremities were present in both posterior tibials and dorsal pedis. The right leg was strong, but there was some tenderness posteriorly over the region of the sciatic nerve. Examination of the left leg showed some weakness in the hamstrings and quadriceps, but more pronounced weakness on dorsal flexion or plantar flexion of the foot and toes. There was generalized atrophy of the muscles of the left leg. The knee and ankle jerks were slightly hyperactive, and there was a positive Babinski sign bilaterally. Sensory examination revealed a marked loss of pain sensation in the distribution of L5 and S1 roots on the left.

Admission laboratory studies showed a hemoglobin of 12.0 Gm. per cent. The white blood count was 20,500/cu. mm., with a differential smear showing 64 per cent segmented polymorphonuclear leukocytes, 35 per cent lymphocytes and 2 per cent monocytes. The urine contained 2+ protein, and gave a 4+ reaction for blood. Microscopic examination of the urine revealed 18 to 20 red blood cells per high-power field, and 2 to 4 white blood cells per high-power field. There were occasional granular casts. A chemical test for blood in the stool was 2+ positive. The erythrocyte sedimentation rate was 80 mm./hr. (Westergren). The Kolmer complement fixation test was negative. The blood urea nitrogen was 60 mg. and the creatinine was 3.6 mg./100 ml. The total serum protein was 6.5 Gm./100 ml., with albumin 3.4 and globulin 3.1 Gm. A lupus erythematosus preparation was negative. Roentgen examination of the chest was interpreted as normal except for some scarring in both apices. Intravenous pyelograms

were attempted, but were unsuccessful. The electrocardiogram suggested the possibility of an old posterior myocardial infarction.

Soon after his admission to the hospital, the patient was cystoscoped. It was observed that both ureters effluxed cloudy, reddish urine. A left retrograde pyelogram was thought to be normal.

The patient gradually became more seriously ill. He continued to have a fever that spiked to 102°F. daily. Penicillin and streptomycin were started eight days before his death, and hydrocortisone in a dose of 200 mg. daily was started six days before his death. After this therapy was begun, his body temperature returned to normal, but he had severe nausea and vomiting, and loss of appetite.

At no time did he have gross gastrointestinal bleeding, but his stool was frequently positive for blood. A lumbar puncture revealed an opening pressure of 130 mm. H₂O, with a protein of 43 mg. per cent. A Pandy test was interpreted as negative. A week before his death, his blood urea nitrogen was 110 mg./100 ml., and his sodium was 127, his potassium 5.6, and his carbon dioxide combining power 11.7 mEq./L. Six days later, the blood urea nitrogen was 145 mg. per cent, the creatinine 14.5 mg. per cent, and the potassium 8.1 mEq./L. Repeated urinalyses showed from 2 to 4+ proteinuria, and many showers of red and white blood cells. Oliguria, which began the week before his death, progressed to anuria in the next five days. The pain in his legs and abdomen, which had been so prominent at first as to require narcotics, subsided. Progressive mental confusion developed. The patient died 13 days after his admission to the hospital.

CLINICAL DISCUSSION

Dr. E. O. Theilen, Internal Medicine: Mr. Jones will discuss the case as the student representative.

Mr. Charles Jones, junior ward clerk: The patient under discussion had an attack of pain in his chest and left arm seven years prior to admission. One year later, he had a similar attack. During the next 5½ years he had occasional angina. Myocardial infarction and coronary artery insufficiency seem to have been the most likely causes for these symptoms. Five months prior to admission, he developed persistent numbness in his left hand, for which the possible causes are Raynaud's phenomenon, tabes dorsalis, pernicious anemia or ulnar-nerve trauma of the elbow. Two months later, he began to have progressive swelling of the feet and weakness of both legs. These symptoms could have been due to any one of many conditions, among them alcoholic neuritis, glomerulonephritis, lupus, polyarteritis and congestive heart failure. Pain in the calves and Achilles tendons could possibly have been caused by tabes dorsalis, one of the collagen vascular diseases or acute intermittent porphyria. Three days before his admission, the onset of constant lower abdominal pain made us consider an acute abdominal inflammatory condition,

referred pain from myocardial infarction, porphyria or visceral ischemia.

The admission blood pressure was 160/90 mm. Hg, and there were grade II hypertensive changes. The heart was not enlarged, and we interpreted this finding to mean that congestive failure was not present upon admission. The soft abdomen, with mild guarding and tenderness in the lower right quadrant, without rigidity, suggests bowel infarction.

The neurologic findings in the lower extremities are indicative of both upper and lower motor-neuron lesions. These findings can be encountered in collagen vascular diseases, tabes dorsalis and uremia.

The urine had 2+ protein and granular casts, indicating a renal abnormality and tubular degeneration. The elevated sedimentation rate, negative Kolmer complement fixation test and negative LE prep are interpreted as non-specific of any particular disease. The LE prep is positive in 80 per cent of lupus cases, and thus the possibility of lupus is still present. Cystoscopy revealed both ureters effluxing red urine, and this indicated a renal origin for the hematuria. The possible causes of hematuria that we considered are allergic purpura, acute glomerulonephritis, collagen vascular disease and blood dyscrasias.

The patient did not respond well, he progressed to acute renal failure consistent with the blood chemistries, and died 13 days after admission, presumably of complications secondary to uremia.

In summary, the patient had many diffuse signs and symptoms which at first did not appear indicative of any specific disease entity. Thus we were led to consider a collagen vascular disease, primarily. Polyarteritis nodosa is our final diagnosis, since it is the best explanation of the abdominal pain, neuropathy, fever, leukocytosis and acute renal failure. Also to be considered are systemic lupus erythematosus and acute glomerulonephritis. The final cause of death, in our opinion, was acute renal failure.

Dr. Theilen: Dr. Clifton has agreed to discuss this case as an unknown.

Dr. James A. Clifton, Internal Medicine: Our patient was a man in his fifties who had what was interpreted as a myocardial infarction. There is certainly nothing unusual about that. He apparently had some angina and subsequently had another myocardial infarction. One might wonder why his electrocardiogram did not show evidence of disease, but the changes that were present were those of an old posterior infarction, and as you know, it is sometimes difficult to demonstrate a posterior infarct on a routine electrocardiogram.

Then something happened to him besides this rather routine history of myocardial disease. He developed numbness in the hand. We are told no more about this—whether there was motor dysfunction or other disability. He then developed pain in his leg, and it eventually led him to seek

admission to the hospital. In one paragraph of the protocol we are told that he did not have pain in the back, and in the next we are told that he did. So we don't really know about his back pain.

The pain in his abdomen was non-specific in nature, and he did not have any urinary-tract symptoms, in spite of the marked abnormalities in his urinalysis. He had mild hypertension, slight tachycardia and some fever, and he appeared ill. There were some changes in his eyegrounds and a little guarding in the abdomen, and the fact that pulses in the lower extremities were present might have some significance for those of us who have been thinking of vascular disease.

Then we come to the changes in the neurologic examination. When I am faced with a situation about which I have some doubts, I usually ask someone more familiar with such matters, and Dr. Bell has agreed to be my neurologic consultant. I should like to ask him to come up here and share this podium with me.

In the first place, Dr. Bell, did this man have sciatica?

Dr. William E. Bell, Neurology: My answer would have to depend upon what you mean by the term *sciatica*. From the protocol, we can state without any hesitation that there was evidence of involvement of the sciatic nerve in this patient, and the evidence of involvement included tenderness over the nerve trunk and tenderness in the calf musculature. Both of these are manifestations of sciatic-nerve involvement, but strictly speaking they aren't what we ordinarily call "sciatica." Specifically, the term *sciatica* designates herniated-disc disease in the low back, and there is nothing in this patient's history to suggest that he had anything of that sort. In the old literature an entity was referred to as idiopathic sciatic neuritis, and more and more people are coming to believe there is such an entity as sciatic neuritis or isolated involvement of the sciatic nerve without a compression syndrome. In answer to your question, then, I don't think this patient had what we think of as sciatic neuritis, but he did have some variety of involvement of the sciatic nerve.

Dr. Clifton: Does the tenderness over the area of the right sciatic nerve have any bearing on the differential diagnosis of cord lesion *versus* peripheral neuritis?

Dr. Bell: Up to a point, it does. Tenderness over the nerve trunk, if it is actually over the nerve trunk itself and if it is a reliable physical finding, can usually be taken as an indication of a peripheral involvement of the nerve, as opposed to a central involvement. An individual can have combined cord disease and peripheral nerve disease. At least if you find tenderness over the nerve, involvement of a peripheral nerve is suggested. Such a finding doesn't necessarily differentiate between a compressive process such as a herniated disc or neoplasm in the low part of the canal, as opposed to a peripheral involvement. It is more in keeping with a peripheral neuropathy, however.

Dr. Clifton: In considering the possibility of peripheral neuritis in this man, what significance should we give to the hyperactive knee and ankle jerks, and the positive Babinski signs?

Dr. Bell: I think that the answer to that question will be more apparent after you have committed yourself a little further, for one needs to discuss the pathogenesis of the basic disease before he can describe what actually happened here. These findings are not incompatible, and according to the protocol they actually occurred. However, one must implicate more than just peripheral-nerve involvement when he starts talking in terms of hyper-reflexia and extensor plantar responses. This, then, carries one into the spinal cord, or at least into the central nervous system. When these findings occur in addition to those of peripheral nerve disease, then disease simply must be postulated in more than one place in the nervous system.

Dr. Clifton: In other words, these reflex changes are not those that one sees with peripheral neuritis alone?

Dr. Bell: That is correct. In peripheral neuritis, if there is any change in reflex function, there initially will be a diminution and eventually a total loss. Early in the course, however, you may have minimal reflex change.

Dr. Clifton: What do you think about his signs of weakness in the leg—muscle wasting and the loss of pain sensation? Do they fit with peripheral neuritis?

Dr. Bell: Yes, these are compatible with a peripheral neuropathy in the majority of instances. The majority of peripheral neuropathies are a mixed variety when both sensory and motor deficits occur. The individual has some abnormalities on both sides of the sphere—motor as well as sensory. Pain can be assumed to indicate involvement of the sensory side.

Dr. Clifton: Since we apparently must look a little higher than the peripheral nerve, the possible diagnosis of cord tumor arises. Usually, we read in the textbooks that in cord tumor, the loss of pain will be on the side opposite to the motor changes. In this man, it was on the same side. Would you care to say something about that point?

Dr. Bell: Considering that possibility would get us into a detailed discussion of the anatomy of the cord. Actually, the fact that the weakness, the sensory deficit and the pain were all in the same extremity suggests that the problem in this instance was a peripheral involvement. We had better say nothing about the spinal cord in attempting to explain this particular individual's sensory deficit.

What you have said about sensory loss and motor deficits in spinal cord tumors is true. They are usually crossed.

Dr. Clifton: As I said before, we don't know about the numbness of the patient's hand. If one regards it as a paresthesia that developed and per-

sisted, then it too might indicate involvement of the nervous system, but at a different level.

Dr. Bell: We have assumed that what has been described was peripheral, and involved the lower extremities. The numbness in the hand, then, probably was also a peripheral manifestation, and was on the same side as the weakness.

Dr. Clifton: Dr. Bell, would you care to make any comments of your own about this case?

Dr. Bell: I think you have already alluded to the vascular aspect of the disease in general, and have already talked of the findings that suggested a vascular disorder to you. You have spoken about the involvement of multiple organ systems. One of the interesting items about the neurologic disorder, I think, can be gleaned from the protocol. It was the spotty occurrence of a peripheral type of involvement, as opposed to the relatively symmetrical occurrence of many peripheral neuropathies. As one reads the protocol, he finds that the neuropathy occurred as multiple involvements of single nerves. One might refer to this as a mononeuritis multiplex, in that it involved multiple areas and appeared to involve virtual twigs of nerves in different extremities. This finding, in itself, is of some help to us in relating the lesion to a vascular problem affecting the nerves. Dr. Clifton has already talked of vascular problems affecting other viscera. Things tend to tie up very closely, from the standpoint of nervous-system involvement and general visceral involvement, cardiac involvement, etc.

Dr. Clifton: Thank you very much, Dr. Bell.

I have written on the blackboard a list of the organ systems that were involved in this man's clinical picture. I have drawn a line under "heart" because it is entirely possible that his was a routine story of coronary atherosclerosis, and had nothing to do with his final illness. It could be that the two were related, as we shall see in a moment.

Since several body systems were involved, one must look at the clinical picture in broad categories as he searches for the etiology. Perhaps some toxic material that the patient ingested either inadvertently or on purpose was responsible. I am unable to find a specific toxic substance that would produce this entire clinical picture, however. Arsenic exposure does not produce the urinary findings that were reported in this case. Chronic lead and bismuth intoxication will produce hematuria, proteinuria and casts in the urine. However, both of these poisonings are associated with mental changes. A metabolic disturbance such as porphyria must be considered.

Could an infectious process have been responsible? Tuberculosis affects the kidneys and can produce neurologic lesions by virtue of its localization in the spine. The roentgenograms of the chest were said to show thickening in the apices, perhaps indicating old tuberculosis. Are those films available?

Dr. Theilen: Our radiologist isn't here, but I can

give you the report. There was scarring in both apices on the postero-anterior view of the chest. Otherwise the lung fields were clear; there was no pleural pathology. Cardiac and aortic contours were within normal limits.

Dr. Clifton: In the interpretation of the retrograde intravenous pyelograms, was anything said about the lumbar spine?

Dr. Theilen: No comment was made about that. It was a normal left retrograde pyelogram.

Dr. Clifton: It would be most unusual for tuberculosis of the kidneys to produce this much change in renal function and still not affect the pyelogram.

I do not believe that a neoplasm could have accounted for this whole clinical picture. Therefore, since I have eliminated toxic, metabolic, infectious and neoplastic diseases, I am down to what I believe is the best possibility, namely a vascular disease.

Any of the primary diseases of the arterial system would produce this widespread pleomorphic picture. Of these, polyarteritis nodosa or essential polyangiitis or whatever you wish to call it would be the most likely one. In going through the literature, I have noted that 60 to 70 per cent of patients with polyarteritis nodosa have increased white blood cell counts, fever, abnormal urinalyses and hypertension. The patient under discussion had all of these. About 60 per cent have anemia, weight loss, musculoskeletal disturbances and abdominal pain. Our patient had these, although his anemia was quite mild. About 40 per cent have weakness, gastrointestinal symptoms, tachycardia, peripheral neuritis and edema. About 30 per cent have azotemia, and 20 per cent have central nervous system symptoms. It seems to me that the whole picture in the present case can best be explained by a diagnosis of polyarteritis nodosa.

I think it possible that the cardiac lesion may not have been the result of this disease. The interval from the onset of the patient's myocardial infarction to his final episode is quite long for polyarteritis, although it is not absolutely incompatible with that disease. Furthermore, angina pectoris is unusual in patients who have polyarteritis that involves the heart and produces symptoms.

Dr. John W. Eckstein, Internal Medicine: Isn't the age of 59 unusual for polyarteritis?

Dr. Clifton: The age span of this disease is anywhere from childhood to the eighth decade. It is true that the bulk of patients are somewhat younger than this man was, but I think his age in no way militated against the diagnosis.

Dr. D. S. Longnecker, Pathology: The most characteristic finding of the principal disease process in this case was a widespread, segmental, necrotizing vasculitis involving small muscular arteries and arterioles. The disease involved short segments of arteries in many organs. There were entirely uninvolved segments adjacent to the areas in which there was intense acute angiitis (Figure

1). The sites in which we found this process were the kidneys, the peripheral nerves, the spleen, retroperitoneal fat about the adrenals, the muscularis of the bladder, the prostate, spermatic cord, adventitia of the aorta, the liver, and probably the heart. The majority of lesions appeared to be acute or in an early healing stage, but a very few of the lesions showed evidence of more mature scarring and healing. The most severely involved organs were the kidneys. There was extensive arteritis, as well as widespread glomerulitis, within the kidneys.

In the microscopic sections, small muscular arteries and arterioles showed evidence of well-developed fibrinoid necrosis involving the intima and the inner layers of muscularis, and frequently there was an intense leukocytic infiltration of the outer layers of the muscularis and the surrounding adventitia. The leukocytic infiltrates included polymorphs, mononuclear cells and also a conspicuous number of plasma cells (Figure 2).

In a section from the left sciatic nerve, there was a vessel which had progressed to a more advanced stage. There was somewhat less leukocytic infiltrate than is seen in the acute phase, and the lumen of the vessel had been replaced by imma-

ture fibrous tissue which I suppose had resulted from organization of an area of fibrinoid necrosis. Such a vessel might have healed with a very small lumen, or it might have gone on to complete obliteration.

Sections of kidney demonstrated severe glomerulitis. In early stages, the glomerular tufts showed some epithelial proliferation, and in the glomerular space there were red blood cells and some precipitated protein material. In a more advanced stage, there were large masses of leukocytes as well as red cells and precipitated protein material in the glomerular spaces and a slightly greater degree of proliferation of the glomerular tuft. In glomeruli which showed the most advanced lesions, there was a greater degree of cellularity, and proliferating cells had almost completely obliterated the glomerular space. This represented the greatest degree of advancement of the renal lesion, probably because the further development of the glomerulitis had been interrupted by death.

In sections of lung, we found extensive intra-alveolar hemorrhage and pulmonary edema. These changes were probably the result of uremia. Vascular lesions in the spleen had resulted in multiple splenic infarcts. There was evidence of hyperten-

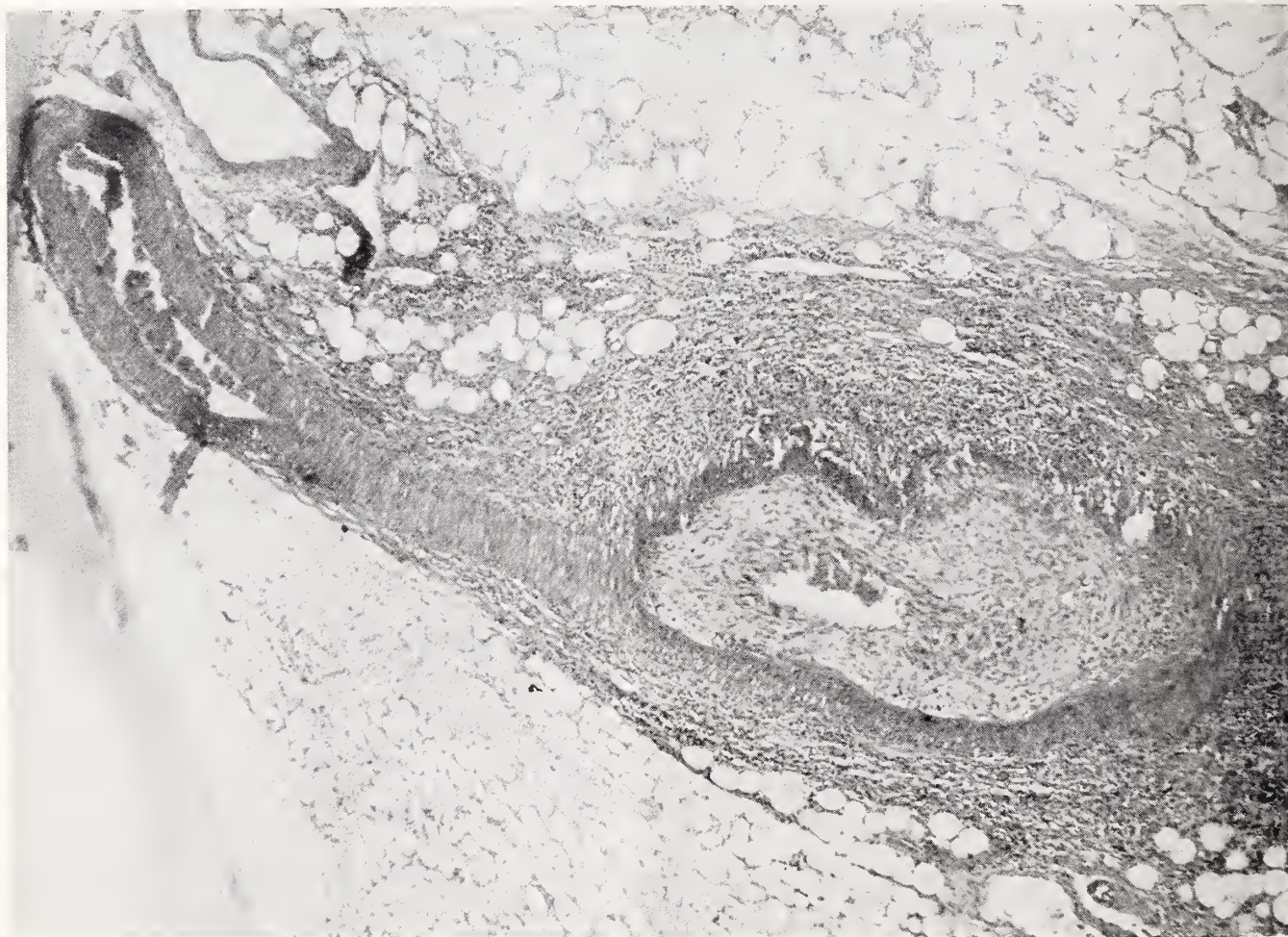


Figure 1. Small muscular artery in periadrenal fat (tangential section). At one edge of the photograph there is uninvolved arterial wall, and at the opposite edge the vessel is dilated, inflamed and partially occluded by fibrous tissue.

sion as the pathologist detects it, in that we saw left ventricular cardiac enlargement in the absence of valvular disease. Vascular changes in the eyegrounds were pointed out in the clinical protocol.

We saw no evidence of involvement of any vessels in the sections of skeletal muscle, and we therefore assume that a muscle biopsy would have been negative in this case. A few words about diagnosis of polyarteritis by muscle biopsy. It would seem wise to biopsy over a tender muscle, if there is one, in the hope that the tenderness is due to inflammation or vasculitis. It is recommended that a muscle biopsy be fairly large, for the disease may be focal or segmental. If the pathologist receives the wrong segment of an involved vessel, he fails to see a lesion. It follows that the pathologist should very thoroughly examine the biopsy that he receives, making multiple sections through the block in order not to miss a focal area of involvement. While we are on the subject of muscle biopsy, I might mention that in order to prevent distortion by contraction of the very irritable, freshly-excised muscle, it is recommended that the muscle be allowed to sit at room temperature in a moist atmosphere for a period of

20-30 minutes before fixation, so that it loses its ability to contract before it is exposed to formalin. Moreover, it would be preferable to use buffered formalin.

I think we can say that we have a typical case of polyarteritis nodosa, but since this is a multisystemic disease that has a very wide variety of manifestations, it probably is not really fair to refer to any case of it as typical. It might be better to say that the case fits into the broad boundaries of polyarteritis. The relationship of the disease to the various clinical findings has already been discussed. The extensive involvement of the peripheral nerves explains many of the clinical findings. The renal involvement was also striking, and we too ascribe death to acute renal failure. There was a rapid terminal rise in blood urea nitrogen and creatinine. The BUN which we obtained at autopsy was 170 mg. per cent, and the creatinine was 15.5 mg. per cent. We have a situation in which the therapy may have contributed to the rapidity of development of renal failure. Those who have treated patients with polyarteritis report that sometimes there appears to be an acceleration in the process of renal failure when treatment with adrenal corticosteroids is instituted.¹ The patient

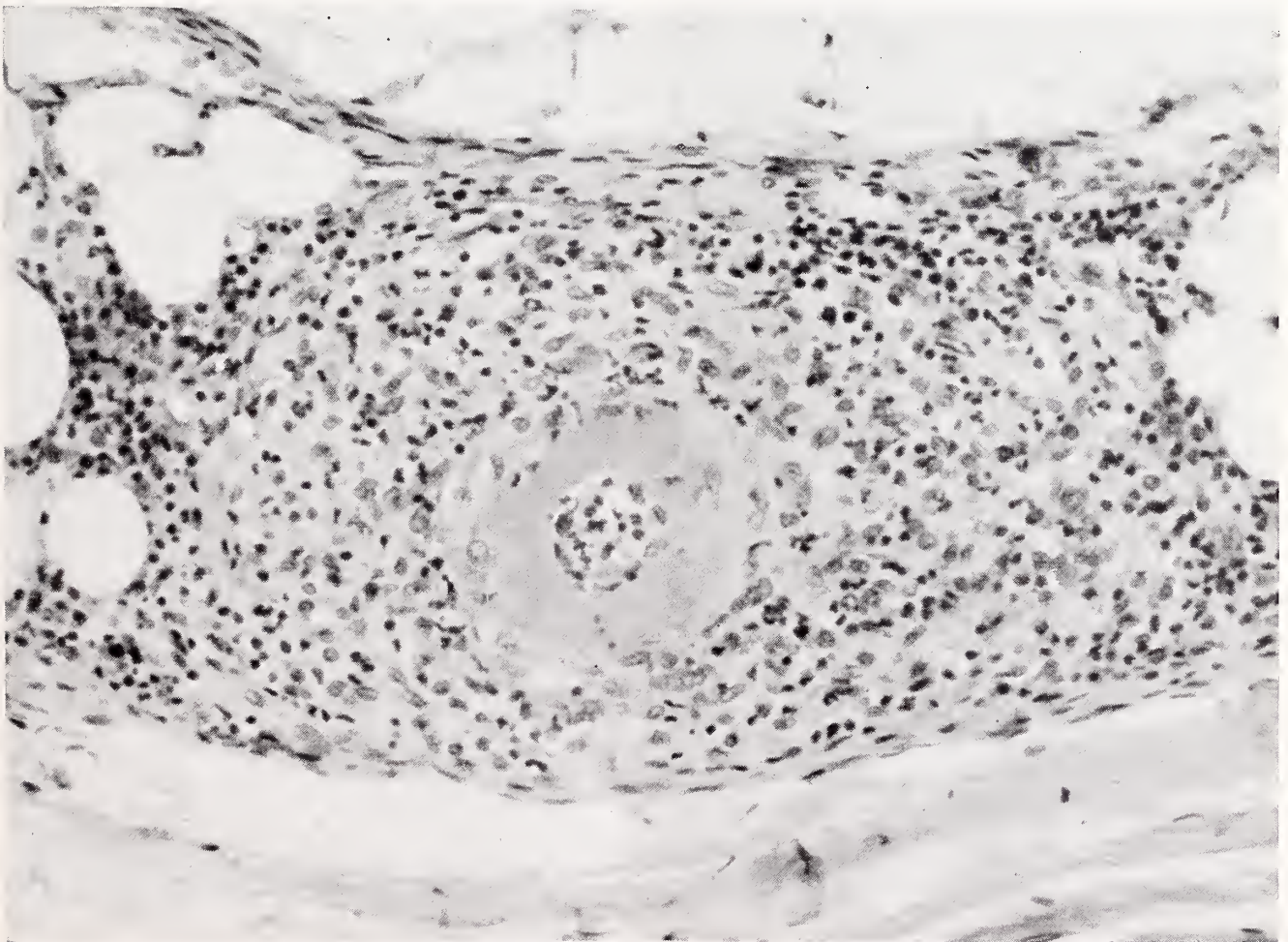


Figure 2. Cross section of arteriole from the right sciatic nerve. The vessel wall has been destroyed by inflammation and central fibrinoid necrosis which forms a homogenous gray ring. The lumen of the vessel is occluded by leukocytes.

was on hydrocortisone for the last six days of life. We can't say with certainty that this therapy affected the renal lesion, but perhaps it accelerated the terminal course.

Thus we have a diagnosis of polyarteritis which is more a matter of comfort than of usefulness. This diagnosis does not tell us the etiology, and therefore does not suggest an effective treatment. Ever since 1925 there has been a growing suspicion that this disease may be a manifestation of hypersensitivity in vessels. A number of clinical observations have led to this suspicion, and we can summarize the types of observation which led to this point of view as follows. Cases of polyarteritis or of a morphologically similar disorder have been observed in patients who died during the course of serum sickness.² Polyarteritis was associated with asthma in 18 per cent of cases in one large polyarteritis series.³ Similar lesions are noted in other diseases such as rheumatic fever and rheumatoid arthritis, which are thought to be manifestations of hypersensitivity. Last, there have been cases in which a necrotizing arteritis has apparently resulted from sensitization to drugs such as the sulfas, penicillin, iodine and Dilantin.³ These observations have led to animal experiments that have supplied supporting data. Necrotizing angiitis can be induced by injecting multiple small doses of horse serum into rabbits, or it can be induced by injecting a single large dose which results in experimental serum sickness.^{4, 5} Injection of other substances which seem to combine with body proteins to form antigens may result in necrotizing angiitis in animals. 4'-Fluoro-10-methyl benzanthracene is a compound which may fit into this category.³

These clinical observations and experimental findings have been reviewed and evaluated, and the result has been the emergence of two points of view. Some authorities, proposing that all cases of necrotizing angiitis have very similar etiologies, would like to lump them all into one disease group. Others would subclassify necrotizing angiitis into a number of categories such as hypersensitivity angiitis, allergic granulomatous angiitis, rheumatic arteritis, periarteritis nodosa and temporal arteritis.⁵ Those who like to subclassify would put drug-sensitivity and serum-sickness angiitis into the hypersensitivity group and set these apart from other inflammatory processes in vessels.

There are two points of view, then, regarding the relationship of polyarteritis to hypersensitivity angiitis. The view of those who do not equate the two processes can be summarized in a quotation from Zeek:⁵ "There is lack of unanimity, however, in regard to claims that the two conditions are identical. Some of the reasons for dissent are as follows: (1) Cases of classical periarteritis nodosa frequently present no clinical evidence of allergy. (2) Lesions of the macroscopic nodular type have been produced experimentally by various procedures, which have not caused hypersensitivity

but in which the common factor has been the production of hypertension, usually by some method involving renal ischemia. (3) Certain differences in the morphology and distribution of the lesions have been observed with a constancy too great to be insignificant."

The opposite viewpoint is held by Angevine,³ who thinks that all these diseases are closely related. "Since 1925 the concept that the disease is a hypersensitive reaction to some non-toxic agent has increased and is now almost universally accepted; however, the offending antigen frequently remains obscure or cannot be identified. Although I am personally inclined to associate all types of polyarteritis with hypersensitivity, it must be admitted that on the basis of the available evidence such a sweeping assumption may not be entirely justified."

Dr. William B. Bean, Internal Medicine: Was there an old infarct, Dr. Longnecker, and were there any coronary lesions of polyarteritis?

Dr. Longnecker: The coronary arteries had mild arteriosclerosis, with no evidence of stenosis or occlusion. There was no evidence of a large, old infarct. There was a small, recent (healing) infarct in the left ventricle, and there was some evidence of inflammation of the vessels in that area, but it could not unequivocally be recognized as involvement by polyarteritis. I think that we don't really know what caused the cardiac symptoms earlier in the patient's clinical course.

Dr. Bean: You describe this as an angiitis. Were there lesions in little veins?

Dr. Longnecker: There were lesions in vessels which were so small that I couldn't identify them as arterioles or venules.

Unidentified questioner: Would you recommend any site other than muscle for biopsy?

Dr. Longnecker: Since 80 per cent of cases are said to have renal involvement, a needle biopsy of the kidney might reveal evidence of the disease in some instances.

Dr. Theilen: Would you make a few comments about this disease process, Dr. Bean?

Dr. Bean: I had the pleasure and opportunity of working in Cincinnati when Zeek and Blankenhorn were working on the pathologic and clinical aspects of these diseases—or of this disease, depending upon which point of view you wish to take. They took the view that these were diseases, rather than a single disease. Clinically, there is some justification for separating what we used to call either periarteritis nodosa or polyarteritis from a sensitivity angiitis. They differ in this respect. The polyarteritis nodosa, as a general rule, is related to arterial hypertension. Lesions are widely scattered throughout the body, and they may be segmental, or may exist in only one, two or three single arteries or arterioles. The clinical pattern is much slower in its evolution, although most people are dead within a year after the first symptoms. Classically, patients have polyneuritis

and abdominal symptoms. They tend to die of complications such as uremia. In many of them, the polyarteritis or periarteritis is a casual, often unsuspected finding.

Sensitivity angiitis tends to occur in people who have been taking one drug or another for a considerable period of time. The sulfa drugs are the commonest culprits. In the collection that Blankenhorn, Zeek and Knowles made, according to my recollection, none of the patients who had this form of acute necrotizing angiitis of little blood vessels survived more than 32 days. It is a fulminating, acute, necrotizing vasculitis, and it is generally quite widespread. Yet, again, it may be segmental and, though widespread, may not affect the vessels uniformly. Clinically there may be a useful distinction between these two types.

We have the same problem with polyarteritis or periarteritis as with other collagen diseases. Is there a single discrete mechanism—i.e., is there a series of etiologic events that must come in 1, 2, 3 order—or is the disease what it is because blood vessels have only a few ways of reacting? The connective tissue of blood vessels has very few responses—hyaline changes, fibrinoid changes, necrosis and the repair that comes with the production of fibrous tissue. The question is whether there is a limited responsiveness to many causes, or whether there is a single cause producing different effects because various blood vessels are different to some extent in their functions and structures. This perhaps is really the *reductio ad absurdum* of academic speculation, for as Dr. Longnecker has pointed out, we seem very happy and very content in having made the diagnosis, but now that we have made it, neither we nor the

patient is really any better off. We may feel somewhat better, but the patient is dead. Here is a field of endeavor for a bright young student!

ANATOMIC DIAGNOSES

Polyarteritis nodosa
Azotemia
Severe pulmonary congestion and edema, bilateral
Multiple old and recent infarcts, spleen
Focal healed myocardial infarct
Generalized arteriosclerosis

STUDENTS' DIAGNOSES

Polyarteritis nodosa
Acute renal failure
(also considered)
Systemic lupus erythematosus
Acute glomerulonephritis

DR. CLIFTON'S DIAGNOSES

Polyarteritis nodosa
Possible myocardial infarction

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2. Rich, A. R.: Role of hypersensitivity in periarteritis nodosa, as indicated by 7 cases developing during serum sickness and sulfonamide therapy. *Bull. Johns Hopkins Hosp.*, **71**:123-140, (Sept.) 1942.
3. Angevine, D. M.: "The Pathogenesis of Polyarteritis" In: *Inflammation and Diseases of Connective Tissue*, ed. by L. C. Mills and J. H. Moyer, Philadelphia, W. B. Saunders Company, 1961, p. 217.
4. Rich, A. R., and Gregory, J. E.: Experimental demonstration that periarteritis nodosa is manifestation of hypersensitivity. *Bull. Johns Hopkins Hosp.*, **72**:65-88, (Feb.) 1943.
5. Zeek, P. M.: Periarteritis nodosa: critical review. *Am. J. Clin. Path.*, **22**:777-790, (Aug.) 1952.

Department of Anesthesia Approved for S.U.I.

Establishment of a separate Department of Anesthesia within the State University of Iowa College of Medicine was approved by the State Board of Regents on April 11. The new department replaces the Division of Anesthesiology in the Department of Surgery. Dr. William K. Hamilton, who is now chairman of the division of anesthesiology, was named acting head of the Department of Anesthesia, effective July 1.

Noting that the change will encourage growth and advancement in the field of anesthesiology at S.U.I., University officials told the Regents that it will lead to the development of a more comprehensive program of undergraduate study in that area. They also pointed out that it will provide for establishment of programs of postgraduate and postdoctoral study leading to a board certificate for a medical specialty or to a graduate degree.

Coming Meetings

IOWA

- May 3-4 **Iowa Eye Association.** State University of Iowa, Iowa City
- May 8-9 **Industrial Safety Association of Iowa.** Hotel Savery, Des Moines
- May 16 **Northwest Iowa Postgraduate Conference (Iowa Chapter of AAGP and the Education Division of Lederle Laboratories).** Sheraton-Warrior Motor Inn, Sioux City
- June 10-14 **Current Topics in Internal Medicine (American College of Physicians).** State University of Iowa, Iowa City

CONTINENTAL U. S.

- May 6-8 **Annual Meeting of the State Medical Society of Wisconsin.** Milwaukee
- May 6-9 **National Geriatrics Society.** Royal Orleans Hotel, New Orleans
- May 6-10 **American Psychiatric Association.** Chase-Park Plaza, St. Louis
- May 8 **Semi-annual Scientific Meeting of the Society of Cosmetic Chemists,** sponsored jointly with the AMA Committee on Cosmetics. Biltmore Hotel, New York City
- May 8-10 **American Association of Genitourinary Surgeons.** Drake Oak Brook Hotel, Chicago
- May 9-10 **Nutrition and Atherosclerosis—a symposium sponsored by Minnesota Heart Association and General Mills.** Minneapolis
- May 9-11 **American Thyroid Association.** Drake Hotel, Chicago
- May 9-11 **American Association for Cleft Palate Rehabilitation.** Shoreham Hotel, Washington, D. C.
- May 10-11 **pH, Acid-Base and Metabolic Problems in Anesthesia. Third Connecticut Postgraduate Anesthesia Seminar.** Hunt Memorial Hartford Medical Society Building, 230 Scarborough Street, Hartford
- May 12 **Society for Pediatric Urology.** St. Louis.
- May 12-15 **Nebraska State Medical Association, 95th Annual Meeting.** Sheraton-Fontenelle Hotel, Omaha
- May 12-16 **Illinois State Medical Society Annual Meeting.** Sherman House, Chicago
- May 13-15 **American Gynecological Society.** Roosevelt Hotel, New Orleans
- May 13-15 **Annual Meeting of American Thoracic Society in conjunction with the 59th Annual Meeting of the National Tuberculosis Association.** Denver
- May 13-16 **American Urological Association.** Sheraton-Jefferson Hotel, St. Louis
- May 13-17 **1963 National League for Nursing Convention.** Atlantic City Convention Hall, Atlantic City
- May 18-19 **Orthopedic Problems in Childhood.** University of California, San Francisco
- May 20-22 **Annual Meeting of the Minnesota State Medical Association.** Duluth Hotel, Duluth
- May 20-23 **American Proctologic Society.** St. Francis Hotel, San Francisco
- May 20-23 **Surgery.** University of Kansas School of Medicine, Kansas City, Kansas
- May 20-24 **Physiological Aspects of Cardio-Pulmonary Disease (American College of Physicians).** Indiana University Medical Center, Indianapolis
- May 21-25 **American Association of Mental Deficiency.** Portland-Hilton Hotel, Portland, Oregon
- May 23 **Fourteenth Annual Dr. F. G. Thompson, Sr., Lectureship (Thompson, Brumm and Knepper Clinic).** Clinic Building, 902 Edmond Street, St. Joseph, Missouri
- May 23-24 **Thirteenth Annual Colorado Intern-Resident Clinic.** University of Colorado Medical Center, Denver
- May 23-25 **Fifty-fourth Annual Meeting of the American Association for Cancer Research.** Royal York Hotel, Toronto, Canada
- May 24-25 **Fifteenth Annual Clinical Conference of the Chicago Ophthalmological Society.** Drake Hotel, Chicago

- May 25-26 **Law in the Practice of Medicine.** University of California, San Francisco
- May 27-29 **American Ophthalmological Society.** Homestead, Hot Springs, Virginia
- May 27-29 **Recent Advances in Gastroenterology.** University of California, San Francisco
- May 29 **American Society for Gastrointestinal Endoscopy.** Fairmont Hotel, San Francisco
- May 30-June 1 **American Gastroenterological Association.** Fairmont Hotel, San Francisco
- June 3-7 **Technics of Rehabilitation.** University of Kansas Medical Center, Kansas City, Kansas
- June 3-7 **Internal Medicine: Current Physiological Concepts in Diagnosis and Treatment (American College of Physicians).** University of Cincinnati College of Medicine, Cincinnati
- June 3-21 **Forty-eighth Session of the Trudeau School of Tuberculosis and Other Pulmonary Diseases.** Saranac Lake, New York
- June 4-18 **World Food Congress.** Washington, D. C.
- June 6-8 **American Geriatrics Society.** Queen Elizabeth Hotel, Montreal, Canada
- June 7-9 **Society of Biological Psychiatry.** Claridge Hotel, Atlantic City
- June 8-9 **American Association of Neuropathologists.** Dennis Hotel, Atlantic City
- June 9-15 **Traineeships for the General Practitioner.** University of Nebraska College of Medicine, Omaha
- June 10-12 **American Neurological Association.** Claridge Hotel, Atlantic City
- June 10-13 **Forty-eighth Annual Convention of the Catholic Hospital Association.** Conrad Hilton Hotel, Chicago
- June 10-14 & June 17-22 **Histochemistry.** University of Kansas Medical Center, Kansas City, Kansas
- June 13-14 **American Rheumatism Association.** Claridge Hotel, Atlantic City
- June 13-15 **Endocrine Society.** Chalfonte-Haddon Hall, Atlantic City
- June 13-16 **American Therapeutic Society.** Shelburne Hotel, Atlantic City
- June 13-16 **American College of Angiology.** President Hotel, Atlantic City
- June 13-17 **Twenty-ninth Annual Meeting of the American College of Chest Physicians.** Ambassador Hotel, Atlantic City
- June 14-15 **Pediatric Ophthalmology.** University of California, Los Angeles
- June 14-16 **Congress of Scientists on Survival.** Biltmore Hotel, New York City
- June 15 **Eleventh Annual Conference on Disaster Medical Care (AMA Council on National Security).** Traymore Hotel, Atlantic City
- June 15 **American Academy of Tuberculosis Physicians.** Ritz-Carlton Hotel, Atlantic City
- June 15 **American Association for the Study of Headache.** Claridge Hotel, Atlantic City
- June 15-16 **American Diabetes Association.** Chalfonte-Haddon Hall, Atlantic City
- June 15-16 **Anxiety and Depression (Academy of Psychosomatic Medicine).** Marlborough Blenheim Hotel, Atlantic City
- June 16 **Society for Vascular Surgery.** Atlantic City
- June 16 **Society for Surgery of the Alimentary Tract.** Shelburne Hotel, Atlantic City
- June 16-20 **Annual Meeting of the American Medical Association.** Convention Hall and Traymore Hotel, Atlantic City
- June 16-20 **Society for Adolescent Psychiatry.** Atlantic City
- June 17-20 **Society for Investigative Dermatology.** Atlantic City
- June 17-29 **Association for Research in Ophthalmology.** Atlantic City
- June 21-22 **Diseases of the Kidney.** University of California, Los Angeles
- June 23-29 **Ninth Annual General Practice Review (University of Colorado School of Medicine).** Denver
- June 24-27 **American Orthopedic Association.** Homestead, Hot Springs, Virginia

- June 24-28 **The Psychosomatic Illnesses** (American College of Physicians). University of Colorado Medical Center, Denver
- June 26-29 **Tenth Annual Meeting of the Society of Nuclear Medicine.** Queen Elizabeth Hotel, Montreal, Canada
- June 28-29 **Minor Surgery.** University of California, Los Angeles
- June 30-July 4 **International College of Surgeons.** Bretton Woods, New Hampshire
- June 30-July 5 **Ophthalmology.** Colorado Springs

ABROAD

- June 2-5 **Canadian Ophthalmological Society.** Royal York Hotel, Toronto
- June 9-15 **International Hospital Congress.** Paris. Write: J. C. J. Burkens, M.D., International Hospital Federations, 24/6 London Bridge Street, London, SE1
- June 14-16 **Society of Obstetricians and Gynaecologists of Canada.** Delawana Inn, Ontario
- June 23-28 **World Commission on Cerebral Palsy.** Copenhagen. Write: P. Hoeg Albrethsen, Samfundet for Vanfore, Esplanaden 34, Copenhagen K
- June 23-28 **International Society for Rehabilitation of the Disabled.** Copenhagen. Write the Society, 701 First Avenue, New York City
- June 27-29 **International Congress on Alimentary and Digestive Allergy.** Vichy, France. Write: Pierre Lignon, 24 boul des Capucines, Paris 9
- June 27-29 **Neurosurgical Society of America.** London. Write: Courtland H. Davis, Jr., M.D., Bowman Gray School of Medicine, Winston-Salem, N. C.
- June 28-30 **International Congress on Food and Digestive Allergy.** Vichy, France. Write Pierre Lignon, 24 boul des Capucines, Paris, 9^e
- July 2-4 **Ciba Foundation Symposium on Cellular Injury.** London. Write: Ciba Foundation, 41 Portland Place, London W1
- July 14-27 **Fifth International Postgraduate Course in Reconstructive Surgery of the Nasal Septum and External Pyramid.** University of Leiden, The Netherlands. Write: Prof. Dr. H. A. E. van Dishoeck, University of Leiden, Academisch Ziekenhuis, Leiden, The Netherlands. Or American Rhinologic Society, 530 Hawthorne Place, Chicago 13
- July 21-25 **Third International Congress of Group Psychotherapy.** Milan, Italy. Write J. L. Moreno, M.D., Box 311, Beacon, New York
- July 22-26 **World Federation for Mental Health.** Amsterdam. Write: 19 Manchester Street, London W1
- July 23-27 **International Society of Chemotherapy.** Stuttgart, Germany. Write: Clemens A. Hockethat, VA Hospital, 13th and Harrison Streets, Oakland, California
- July 28-Aug. 1 **International Psycho-Analytical Congress.** Stockholm. Write L. Börge Löfgren, M.D., Narvavägen 25, Stockholm
- Aug. 9-15 **International Congress on Nutrition.** Edinburgh, Scotland. Write: Alexander Adler, 30 Park Avenue, New York 16
- Aug. 11-16 **Sixth International Congress of Gerontology.** Copenhagen. Write: P. From Hansen, M.D., D.I.S. Congress Service, 19 Sankt Peders Straede, Copenhagen
- Aug. 25-28 **Fifth European Congress on Rheumatic Diseases.** Stockholm. Write: Olle Lövgren, M.D., St. Eriks Sjukhus, Stockholm
- Aug. 26-30 **International Congress of Nephrology.** Prague, Czechoslovakia. Write: V. Fendl, M.D., Institute of Cardiovascular Research, Prague 4-Krc
- Aug. 26-30 **International Symposium on Radiological Health and Safety.** Vienna. Write: International Atomic Energy Agency, 11 Kartner Ring, Vienna 1
- Sept. 1-7 **International Congress on Orthopaedic Surgery and Traumatology.** Vienna. Write: Karl Chiari, Grillparzerstrasse 14, Vienna 1
- Sept. 2-6 **International Congress on Clinical Pathology.** Mexico City. Write: E. Cervera B., M.D., Asociacion Mexicana de Laboratorio Clinico, Durango 213, Mexico 7, D.F.
- Sept. 2-10 **International Congress of Genetics.** The Hague, Netherlands. Write: S. J. Geerts, 14 de Monchyplein, The Hague
- Sept. 15-21 **International Congress on Occupational Health.** Madrid. Write: D. P. Sangro Torres, M.D., Instituto Nacional de Medicina y Seguridad del Trabajo, Ciudad Universitaria, Madrid
- Sept. 16-20 **Ciba Foundation Guest Symposium on Mother-Infant Interaction.** London. Write: Ciba Foundation, 41 Portland Place, London W1
- Sept. 19-21 **Congress of the International Society of Cardiovascular Surgery.** Rome, Italy. Write: H. Haimovici, M.D., 862 Park Avenue, New York 21
- Sept. 19-22 **Fifth International Congress of General Practice.** Salzburg, Germany. Write: K. Engelmeier, M.D., Internationale Gesellschaft für Praktisch Angewandte Medizin, Langestrasse 21, Oelde, Westf. West Germany
- Sept. 26-28 **International Congress of Therapy.** Brussels. Write: Dr. Bauduin, Faculté de Médecine, 115 boul de Waterloo, Brussels
- Oct. **American Society of Plastic and Reconstructive Surgery.** Hawaiian Village Hotel, Honolulu. Write: T. Ray Broadbent, M.D., Secretary, 508 E. South Temple, Salt Lake City
- Nov. 5-13 **Ninth Congress of the Pan-Pacific Surgical Association.** Honolulu. Write: F. J. Pinkerton, M.D., Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13, Hawaii
- Nov. 13-Dec. 10 **First Pan-Pacific Mobile Educational Lecture Seminar.** New Zealand, Australia, Thailand, the Philippines, Hong Kong and Japan. Write Dr. F. J. Pinkerton, Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13

Rocky Mountain Cancer Conference

Dr. Edward R. Annis, president-elect of the American Medical Association, will be one of the principal speakers at the 17th Annual Rocky Mountain Cancer Conference, July 12-13, at the Brown Palace Hotel in Denver.

The annual conference is co-sponsored by the Colorado Division of the American Cancer Society and the Colorado Medical Society.

Among the speakers at the two-day scientific program will be: James C. Doyle, M.D. (Ob-Gyn), Beverly Hills; Edward A. Gall, M.D., Director Department of Pathology, Cincinnati General Hospital and Editor in Chief of the *AMERICAN JOURNAL OF PATHOLOGY*; Olaf H. Pearson, M.D., Associate Professor of Laboratory Medicine, Western Reserve Medical School; Henry L. Jaffee, M.D., Director Division of Radiation Therapy and Nuclear Medicine, Cedars of Lebanon Hospital; Howard R. Mahorner, M.D. (Surgeon), New Orleans; Murray M. Copeland, M.D., Professor of Oncology, University of Texas Postgraduate School of Medicine, Houston.

The first day of the Conference will be devoted to scientific papers presented by the guest speakers. A panel discussion featuring the guest speakers and entitled "Available Methods in the Treatment of Persistent Cancer," will highlight the morning session of the second day. A Round-Table Forum will follow the panel in the afternoon.

Application has been made for A.A.G.P. accreditation of the Conference. Further information may be obtained by writing Rocky Mountain Cancer Conference, 1809 East 18th Avenue, Denver 18, Colorado.



An Analeptic for the Comatose Patient

Suicide has become an all-too-frequent cause of death, and attempted suicide has become an increasingly frequent occasion for admissions to our hospitals. One of the commonest methods employed in attempted suicide is the ingestion of large amounts of barbiturates or other depressant drugs, and many of the patients are admitted in coma. The addition of any new mode of treatment which will accelerate the return of these unfortunate patients to consciousness is a welcome addition to the physician's armamentarium.

The use of analeptics has been in disrepute, and numerous articles in the literature have opposed the use of such drugs in the treatment of coma on the grounds that they were too dangerous, because they induced vomiting and a consequent aspiration of vomitus, and because in some cases they produced convulsions. A recent report by Hoagland and McCarthy* describes the successful use of a new analeptic which often restored consciousness in cases of barbiturate poisoning, and which, with the method that they employed, produced no ill effects.

The drug is methylphenidate, available as Ritalin (Ciba) in ampules containing 100 mg. In animal experiments, the drug was found to nullify the hypnotic effects of pentobarbital, when the two were given simultaneously, and it was antagonistic to the central effects of reserpine and chlorpromazine. It also elevated the blood pressure, which may be an advantageous effect in the treatment of the comatose patient. An additional effect was the stimulation of respiration if the respiratory center had been depressed by morphine-like drugs. It was found to enhance the effect of norepinephrine, but to be antagonistic to the hypertensive effects of amphetamine or ephedrine. Thus, the drug was considered to be an analeptic with both cortical and subcortical action. It was found to be relatively safe. The LD 50 dose for rats was 367 mg./Kg., orally, and 50 mg./Kg., intravenously.

Clinically, the authors used the drug in patients with barbiturate poisoning to restore consciousness as rapidly as possible. Coma was defined as a profound state of unconsciousness, from which the patient could not be aroused by verbal command or by any kind of manual stimulation. The drug

was employed in all stuporous patients, as well as comatose ones, for it is difficult to know accurately how much barbiturate has been taken, when it was taken, or whether the effects will increase or diminish.

Methylphenidate was injected through the tubing of the intravenous infusion. The initial dose recommended was 10 to 20 mg. for the treatment of the comatose adult. If the patient did not improve, 10 to 20 mg. was given every five to 10 minutes, depending on the degree of depression. If consciousness waned, the dose was repeated. In some patients, the drug was given by continuous infusion in a dose of at least 10 mg./hr. If a total of 1.0 Gm. had been given without effect, its continuation was regarded as useless.

According to the authors, the intravenous doses of methylphenidate employed were not dangerous. They found that doses up to 920 mg. in 12 hrs. had no ill effect, and they quoted Tickton as saying he had given doses as large as 900 mg. in a one-hour period without ill effect, and that he had given up to 1,400 mg. in treating 20 patients with barbiturate poisoning without observing any undesirable effects. If the patient has been receiving a vasopressor drug, it may be possible to discontinue the drug or to reduce the dose.

From their experience with methylphenidate in the treatment of 16 cases, Hoagland and McCarthy observed that the drug can abolish the effect of barbiturates. They often noted a shortening of the period of unconsciousness, and this is important in the management of the comatose patient. An early return to consciousness permits the patient to swallow saliva and to cough up sputum and mucus, and it reduces the number of attendants needed, permits interrogation, and makes the use of a urinary catheter unnecessary.

The authors conclude that the long-held belief that analeptics are valueless in the treatment of coma should be discarded. The fact that these drugs had undesirable effects when used several decades ago is of historical interest only, and should not be made the basis for depriving patients of the benefits of modern drugs which have proved safe and effective.

Surgery for Bronchogenic Carcinoma

A recent report by Ehrenhaft and associates,* at University Hospitals, Iowa City, on the results of the surgical treatment of bronchogenic carcinoma should be of great interest to the physicians of this state. The study covered an 11-year period from July 1, 1949, to June 30, 1960, and summarized their experience with pathologically proved lesions in 1,097 patients.

Excluded from the study were patients with pulmonary cancer that was considered metastatic,

* Hoagland, R. J., and McCarthy, R. J.: Treatment of drug-induced coma: effectiveness of methylphenidate. *AM. J. MED. SCI.*, 242:189-197, (Feb.) 1963.

* Sensinig, D. M., Rossi, N. P., and Ehrenhaft, J. L.: Results of surgical treatment of bronchogenic carcinoma. *SURG., GYNEC. & OBST.*, 116:279-284, (Mar.) 1963.

with pulmonary adenoma, and with alveolar or bronchiolar carcinoma. The latter were excluded because the origins of their lesions were too controversial to permit their inclusion in a study of surgical results in bronchogenic carcinoma.

All patients were evaluated by the taking of a complete history, by physical examination, by routine laboratory studies, by electrocardiography, by bronchoscopy, and by bronchograms if the neoplasm could not be visualized at bronchoscopy. Biopsies of the supraclavicular fat pad were made only in cases in which a node was palpable, or in order that a diagnosis could be made in a poor-risk patient.

If the carcinoma had invaded the chest wall or the trachea, or if a vocal cord were paralyzed, resection was not attempted. The presence of fluid in the pleural cavity was not a contraindication to operation unless the pathologic diagnosis was clearly cancer. This condition was infrequent. Upon cytologic study it was found that the reaction of the mesothelial cells often simulated a neoplasm.

Most explorations were done with a view to resection unless the neoplasm was too extensive, and few patients were refused the benefit of operation because of infirmity. A standard pneumonectomy was the resection of choice, and at times superior mediastinal lymph nodes were dissected or intrapericardial vessels were ligated when necessary to remove the cancer. Lobectomy was done in patients of advanced age, in patients with emphysema, and in those in poor physical condition, if the lesion was located peripherally and the lymph nodes did not appear to be involved. As the surgeons' experience increased and as they recognized that lobectomy was a satisfactory and accepted operation for localized lesions, they performed this procedure more frequently.

Of the 1,097 patients seen in the 11-year period, 624 were subjected to operation. In 32 per cent of the patients, the bronchogenic carcinoma was resected. Most of the patients were between 50 and 69 years of age, and 6.4 times as many men as women were operated upon. Pneumonectomy was performed in 283 patients, lobectomy in 60, wedge resection in two, and segmental resection in three. There were 275 patients who underwent thoracotomy in whom the lesions were found to be unresectable.

Of the group of patients who were subjected to pulmonary resection, the pathologic diagnosis was epidermoid carcinoma in 224; adenocarcinoma in 47; mixed epidermoid carcinoma and adenocarcinoma in three; and anaplastic carcinoma in 75. In contrast with those in whom resectable lesions were found, the following are the findings in those on whom exploratory operations were done but resection was not carried out: adenocarcinoma, 55; epidermoid carcinoma, 96; and anaplastic carcinoma, 103 cases. Thus, 21 per cent of the tumors resected were anaplastic, but 41 per cent of the non-resectable lesions were anaplastic.

Any patient who died within 30 days after operation was considered a surgical death. In the group of 283 pneumonectomies, there were 31 deaths (11.0 per cent), and 40 per cent of the deaths were due to cardiovascular complications. In the group of 66 patients who had lobectomies or lesser resections, there were 14 deaths (21 per cent). Forty-three per cent of those 14 died from respiratory complications, and 28 per cent died from cardiovascular causes. In the patients more than 69 years of age who were subjected to pneumonectomy, there was a mortality of 17 per cent, in contrast to a mortality of just 8 per cent in patients in the same age group who had lobectomies. The 30-day mortality in the unresected group of patients was 15 per cent.

The most common early postoperative complications were cardiac arrhythmia, infection or cor pulmonale, whereas the most frequent late complications were infection and cor pulmonale. Postoperative empyema occurred in seven patients in the pneumonectomy group, and in one of the 66 patients subjected to a lesser operation.

The 5-year survival rate in the patients who had undergone pneumonectomy was 22 per cent, and in those who had been subjected to lobectomy it was 23 per cent. Of the patients who had exploration only, just two survived five years. Of those who had pneumonectomy for epidermoid carcinoma, 24 per cent survived five years; for adenocarcinoma 17 per cent; and for anaplastic carcinoma 20 per cent. Of the patients who survived five years or more after pneumonectomy, lymph nodes were positive in the resected specimen in 36 per cent.

Of unusual interest was the observation that among those patients who developed empyema postoperatively, three of the seven had survived five or more years at the time of the study, and four of the seven were without known disease. Experimental studies have indicated that both gram-positive and gram-negative bacteria produce anti-tumor substances. The relatively high survival rate in the patients who developed empyema suggests that this subject deserves further investigation.

Attend the
AMA ANNUAL MEETING
Atlantic City
June 16-20
(See pages xxi, xxii and xxiii)

Anginal Pain

Smith and Papp, from Charing Cross and London Chest Hospitals,* have emphasized that there are a considerable number of patients who experience paroxysms of angina at intervals over periods of months or years, by day or night, but never in relation to effort. They point out that the wary clinician should consider thoracic pain at rest as possibly coronary in origin, even if there is no effort pain, and that the association of coronary heart disease with non-cardiac disorders may lead to confusion and to errors in diagnosis.

According to these men, anginal pain has been classified into two broad categories: first, a repetitive, paroxysmal type related to effort; and second, pains unrelated to effort that were recurrent and more and more persistent as a prelude to cardiac infarction. The diagnosis in these two forms did not generally remain long in doubt, and in those patients with anginal pain independent of effort, a sufficient grade of effort—locomotion—would surely provoke it.

Smith and Papp propose a third variety of angina which is clinically separate from effort angina and from the worsening angina that terminates in cardiac infarction: "We now bring together as a group those syndromes in which pain proceeds to emanate from the heart, occurs sporadically, often without provocation and sometimes concerned with posture. In this group the recurrent pains may appear at long intervals and without deterioration of effort tolerance for years. Sometimes attacks are related to cold or to emotional causes; at times they develop only in recumbency; and at times they are closely related with a disorder that is not related to the coronary system or the heart at all, such as gallbladder disease, cervical spondylitis and gastro-esophageal disorders." This group did not include any syndrome which could not be shown at once or in time to have been caused by coronary artery disease. This was determined by cardiography, either in or out of the attack, by the cardiographic effort test or by the ultimate development of cardiac infarction.

The authors proposed the following classification of angina independent of effort:

1. Episodic angina
2. Postural angina
3. Linked angina
4. Status anginosus.

Episodic angina is a syndrome in which the pain is of the same character as in angina of effort, and occurs at longer or shorter intervals. Each attack is similar to the others, but the initial one may be more severe. Smith and Papp say that this disorder may recur over a course of 10 or 15 years, and the patient continues to have a good effort tolerance, not limited by pain. Some of the people in this group, though they have anginal episodes at rest,

are able to lead full, active lives, engaging in activities such as walking and climbing, playing golf and gardening, with freedom from thoracic pain. The pain in episodic angina is ordinarily as severe as the pain in effort angina, it is more prolonged, and it may be relieved by glyceryl trinitrate. It may radiate to the back, to the shoulders and elbows, and to the jaws. The resting electrocardiogram may be normal or abnormal. If normal, repetition after exercise may show changes typical of myocardial ischemia. The true diagnosis may continue in doubt until one of the attacks is unusually prolonged, and it is then recognized as a proved cardiac infarction.

Postural angina occurs in two forms: nocturnal or decubitus angina; and angina in relation to certain postures such as stooping. The authors prefer the term *nocturnal angina*, for in most of their patients it is in lying down and sleeping that the seizures occur. It is postulated that the increased return to the heart during the night, due to the reabsorption of fluid which has accumulated in the tissue spaces during the day, may be responsible for this particular syndrome. The cause may be similar to that of cardiac asthma, and the two conditions are occasionally associated and may benefit from the use of diuretics. Dreaming may explain some of these attacks, and it is possible that mental strain and emotion may be factors in precipitating nocturnal pain. Angina of stooping is not uncommon in patients with deficient coronary circulations. Precordial pain which comes on when the patient is tying his shoes is typical of this condition. Stooping is said to produce a rise in both systolic and diastolic pressures.

Linked angina is the association of the anginal syndrome with non-cardiac disorders that trigger bouts of thoracic pain. Too often, the possibility of coronary artery disease is forgotten, and anginal pain centered at the lower end of the sternum may falsely be attributed to gallbladder disease. Cardiac pain referred to the shoulder and arm may be thought to be rheumatic in origin. Angina may be linked with spinal arthritis, with hiatus hernia, with gastric and duodenal ulcer, and with left mammary pain. The principles of referred pain are based on the anatomical fact that afferent paths from somatic regions and from visceral sources enter the spinal cord at levels and by pathways which correspond closely to the afferent pathways for cardiac pain. According to the authors, whenever there is any doubt about whether the pain is of coronary origin or from disease of another organ, it is probable that both systems are involved. However in linked angina, the coronary element is the major one.

Status anginosus is included in the group of anginas independent of effort for completeness. Ordinarily, patients who fall into this category have angina of effort, but in addition they have the most severe form of decubital angina, and it fre-

* Smith, K. S., and Papp, C.: Episodic, postural and linked angina. *BRITISH M. J.*, 2:1425-1430, (Dec. 1) 1962.

quently terminates in cardiac infarction, though this may be delayed for months or years.

The authors conclude with the statement: "There should be less reluctance to consider thoracic pains at rest as possibly coronary, even if there is no effort pain. If the physician is asking himself whether it is angina or, say, gallbladder disease, he should be considering the likelihood that both disorders exist."

Lumbar Sympathectomy for Arteriosclerosis Obliterans

Because the number of aged people in the general population is increasing, the problem of management of serious disturbances of the circulation of the lower extremities confronts the clinician with greater and greater frequency. In a recent article by Alexander Blain and associates,* it is pointed out that the glamor of the new surgical attack on symptomatic arteriosclerosis obliterans has resulted in a neglect of basic surgical principles in its management.

According to this Detroit group, the basic principle in the management of arteriosclerosis obliterans is the need on the part of the physician or surgeon to differentiate between diabetic gangrene in a patient with absent femoral pulses due to arteriosclerosis, and arteriosclerotic gangrene of a toe in a patient with concomitant diabetes mellitus.

In the former, incision and drainage of an infected area may be the only operation necessary. In the experience of the authors, all too frequently transmetatarsal amputation of the uninvolved as well as of the involved toes has been performed in both situations, and in some cases even supracondylar amputation has been done. This has occurred particularly in patients in whom surgical operation on the arteries did not appear to be indicated. It is this group of patients in whom bilateral sympathectomy is considered the operation of choice by Blain and his associates, if certain other conditions do not contraindicate operation.

Adequate examination of the peripheral and central cardiovascular status, including a detailed history, is essential. Case selection demands an assessment of the need for an operation, and the feasibility of any surgical intervention. If surgery is considered feasible, then the surgeon must weigh the possible effects of both lumbar sympathectomy and direct operative attack upon the obstruction.

The judgment of the authors is based on the performance of lumbar sympathectomy on more than 400 patients during a period of 15 years. Most of this experience was at the Alexander Blain Hospital, in Detroit, where a series of 357 operations were done on 196 patients who were followed for from one to 15 years. Approximately one-third of the patients were followed for over 10 years, and

two-thirds for over five years. Excluded from the study were patients who underwent endarterectomy, bypass and grafting procedures, or who had initial supracondylar amputations. Patients operated upon for Raynaud's disease and for thromboangiitis obliterans were also excluded.

Of the 196 patients operated upon at the Alexander Blain Hospital, 101 were over 60 years of age, and 24 were under 45 years of age, the extremes being 26 and 80 years. There were 140 males and 56 females. All had symptomatic arteriosclerosis obliterans with a total loss of at least the pedal pulses. Seventy-eight of the group had an associated hypertension. Fifty-four patients had diabetes, and contrary to the experience of others, the results in them were as good as or better than the results in the cases of the 162 non-diabetics.

The indications for lumbar sympathectomy in 90 of the group were intermittent claudication and calf pain which interfered with their vocations or avocations. In 76 of these 90 patients, there was definite improvement following operation, and they were able to walk much longer distances without pain. Forty patients had ulcers of the legs or toes which, without exception, healed after operation. Twenty-six of the series had gangrenous toes. Eight of these patients lost only the involved toes, and in 10 the gangrene was superficial, and this tissue sloughed following the operation and was replaced by scar tissue and viable skin. Eighteen patients in the entire series underwent supracondylar amputation, and in three of them it was bilateral.

The sympathectomy was bilateral in 161 patients, and unilateral in 35. The operation in 156 of the series included L-2, L-3 and usually L-4 ganglia, and in 40 patients L-1 was also removed (bilateral in 18). The results were considered excellent in 79, good in 46, fair in 26 and poor in 26, and supracondylar amputation was necessary in 18 patients.

According to Dr. Blain, no patient who is seriously ill because of other manifestations of arteriosclerosis should be considered for operation. It should be remembered by everyone concerned that the operation is palliative only, and that no patients are cured by lumbar sympathectomy. It is only by a thorough and painstaking examination of the vascular status of a patient with arteriosclerosis obliterans that a physician can make an intelligent decision concerning management of the case. Dr. Blain is emphatic in his declaration that a generation of surgeons is being trained to use vascular grafts, but not to perform adequate peripheral examinations. The Detroit group found that about 20 per cent of the patients in their series had no peripheral pulses, including the femoral. Angiograms showed a localized block, with a good outflow tract, in less than one third of them, and lumbar sympathectomy is the only feasible operation and it may prevent amputation. A large proportion of the patients had 4+ femoral pulses and perhaps a 2+ popliteal pulse on the right, with absent left popliteal and posterior tibial and dorsalis pedis pulses.

* Blain, A., III, Zadeh, A. T., Teves, M. L., and Bing, R. J.: Lumbar sympathectomy for arteriosclerosis obliterans. *SURGERY*, 53:164-171, (Feb.) 1963.

It was their practice to use femoral arteriography in those patients who had femoral pulses but no popliteal or pedal pulses. In their experience with occlusion of the aorta and iliac arteries, endarterectomy, grafts and bypass procedures were successful in about 75 per cent of the cases. In femoropopliteal occlusions, on the other hand, not more than 50 per cent of direct operations were successful one to two years postoperatively. Sympathectomy as an adjunct or as a preliminary operation may forestall amputation.

Blain and his associates say that there are certain factors which, if present, argue against the performance of a sympathectomy: marked atrophy of an extremity with loss of subcutaneous tissue and consequent diminution of available vascular bed; rapid onset of symptoms; rapidly progressive vascular lesion; or constant intractable pain which is not relieved by sympathetic block.

The indications for lumbar sympathectomy in symptomatic arteriosclerosis, as outlined by the Detroit group, are as follows:

1. Absent pedal pulses in the presence of palpable femoral and popliteal pulses.

2. Absent pedal pulses in the presence of palpable femoral pulses when arteriography shows no direct operable segmentation of the occlusive process or an inadequate outflow tract, and also in the absence of all peripheral pulses with the same arteriographic findings.

3. Loss of any of the three pulses in the very aged or infirm patient in whom lumbar sympathectomy would be easily tolerated and in whom direct surgical attack would be too hazardous.

4. As a adjunct before or after direct surgical approach to the obstruction.

5. In all patients with symptomatic arteriosclerosis obliterans in communities and hospitals where required radiologic and other diagnostic and therapeutic techniques are not available.

From their experience with over 400 operations, Blain and associates conclude with the definite assertion: "Lumbar sympathectomy remains the most widely applicable and effective surgical measure for the management of peripheral arteriosclerosis obliterans."

IMS Cooperating on Radio Programs

The Iowa Medical Society, through its Committee on Health Education, is currently cooperating with Station WOI, Ames, in the production of two weekly health education programs.

The first is titled "60-plus" and is devoted to the presentation of news and information of special interest to Iowa's 350,000 retirees. The various health problems of older people are discussed each week in a five minute interview with a Society representative.

The Society also cooperates in the production of a 25 minute weekly radio program titled "House Call." A guest physician discusses a general health subject and answers questions mailed to the station in advance of the program, as well as inquiries telephoned to the station during the broadcast period. It is anticipated that these programs will continue for several months, and the Health Education Committee plans to invite physicians from all parts of the state to take part in them. Anyone interested in discussing a specific health subject is urged to contact the Committee chairman, Dr. C. D. Ellyson, in care of the Society office.

Film on Mouth Protectors for Athletes

"Block That Kick! In the Teeth" is a film on mouth protectors for athletes that was released on April 5 by the H.E.W. Department. The 16-minute, color and sound film was produced by the Division of Accident Prevention of the U.S.P.H.S., in co-

operation with the American Dental Association and the National Federation of State High School Athletic Associations, and it shows how loss of teeth, other dental injuries and concussions can be prevented by mouth protectors.

It is intended primarily for audiences of dentists, team physicians, trainers, parents, players and coaches.

Preview copies are available from Mr. John H. Hove, Regional Accident Prevention Consultant, U.S.P.H.S., 560 Westport Road, Kansas City 11, Missouri.

School Health Education Workshops

Three school health education workshops will be held during the summer months, as follows:

June 17-28	State College of Iowa
July 8-19	State University of Iowa
July 22-Aug. 2	Drake University

These workshops, developed by the State Department of Health and the State Department of Public Instruction, are two-week sessions which offer three hours of graduate or undergraduate credit, and are open to elementary or secondary teachers, supervisors, administrators, and nurses who are junior, senior or graduate students and are now teaching or concerned with health or related subjects.

The Iowa Medical Society is cooperating in this project by providing scholarships for two teachers and by arranging for guest speakers.

A Report on the First National Rural Safety Conference

Held at the Drake Hotel, Chicago, April 5-6, 1963

SOMEWHERE IN THE neighborhood of 100 to 150 people representing the medical profession, the National Safety Council, various levels of government and several farm organizations, and coming from all parts of the United States, met at the Drake Hotel, in Chicago, on April 5 and 6, to exchange ideas on the causes of farm and home accidents of all sorts, and on methods for preventing them.

In his welcoming remarks, George M. Fister, M.D., president of the AMA, said that as regards accidents that kill or maim so many people each year, the physician is like the man who sees someone at the top of a building a block or more away, ready to jump. He would like to keep him from jumping, but is hardly in a position to prevent his doing so.

The approaches to accident prevention that Dr. Fister suggested were (1) safety education at the primary and secondary school levels; (2) specific safety suggestions as regular features in all country newspapers; (3) radio and TV spot announcements regarding safety. Besides, he suggested that commercial firms might be persuaded to introduce warnings or slogans of various sorts into their radio and TV ads.

DO WE CARE ENOUGH?

Mr. Howard Pyle, an ex-governor of Arizona and now president of the National Safety Council, speculated that the reason for our high accident rate on farms and in homes may be a consequence of our not *caring* enough. After pointing out that our laws designed to protect the public against speeders, drunken drivers and other traffic hazards are not so strong as they might and should be, he told his audience that industrial accidents now constitute no more than 14 per cent of the national problem, whereas they once were a major factor. Safety programs for industry began in 1912, he said, but farm-safety programs didn't begin until 1944. Considerable progress has been made in cutting down the numbers of farm accidents in some states, however. Wisconsin cut its toll in half within 13 years.

As technics for preventing farm accidents, he proposed: (1) more specialists to study the various aspects of the problem; (2) more effort; (3)

more leaflets and other materials; and (4) more guidance for youth groups.

Raymond L. White, M.D., director of the AMA's Division of Environmental Medicine, was to have participated in the conference, but illness prevented him from attending. In his absence, W. W. Washburn, M.D., of the AMA Rural Health Council, said little more than that the AMA has set up its Division of Environmental Medicine to participate in accident-prevention programs.

Mr. William J. Brake, chairman of the Interim Health Committee of the National Grange, reported on several projects that have been undertaken by local divisions of his organization. He admitted that it took a fatality to spur the farmers into action, but in one rural community a cooperative telephone line was set up chiefly so that people could summon help in emergencies. The operator has standing instructions to terminate all calls after three minutes, so that the line will be free within the shortest possible length of time for anyone who needs to call the fire department or the doctor. In Muskegon County, Michigan, he related, the traffic toll was cut in half for a year or more—or for as long as the Safety Crusade lasted. A principal difficulty in such projects, he commented, is to keep the effort sustained. Other Grange groups practiced mouth-to-mouth resuscitation, and at least in one instance the training was subsequently put to life-saving use.

TRAINED INDIVIDUALS AND GOVERNMENTAL AGENCIES ARE READY TO HELP

Mr. Edward S. Adams, chairman of the National Conference for Farm Safety, of the National Safety Council, called attention to a couple of factors that make the accident-prevention program for farmers especially difficult: (1) Farming now requires the mastery of more skills and funds of information than does any other occupation. (2) Farm families live at the work site, and all members thus are equally exposed to occupational hazards.

Mr. Adams outlined the personnel that his organization has mobilized for rural accident prevention: (1) about 70 agricultural engineers and educators (ag. extension), home economists and public relations people; (2) 46 farm safety committees and 76 specialists in 36 states; and (3)

volunteers—called “multipliers”—to carry the word from the National Council for Farm Safety to individual farmers.

Mr. Walter U. Johnson, of the Family Safety Division of U.S.P.H.S., made a number of important points regarding the incidence of farm accidents, but the most useful of the pieces of information that he presented had to do with the literature which his agency makes available to all who request it. During a project that reduced fire deaths and injuries in a Southern county by about 50 per cent, the U.S.P.H.S. developed a manual that it will make available to those who ask for it. It also has copies of an Agriculture Department booklet on home accident prevention, and of a National Safety Council checklist for home safety.

Mr. Johnson had words of praise for two Iowa projects. He applauded the farm-injury reporting system that was inaugurated by the S.U.I. Institute of Agricultural Medicine last year, and he attributed a recent change in tractor design to a study that had been made of power take-off accidents in Iowa. He concluded by saying that U.S.P.H.S. is a team player, not a lone wolf.

Mr. E. W. Tanquary, of the International Harvester Company, and Mr. Carlton Zink, of Deere and Company, indicated the farm equipment manufacturers' interest in preventing farm accidents. Both of them insisted that the manufacturers design and install safety mechanisms of all sorts on the machines that they make and sell, and declared that the principal difficulty is to get the farmers not to remove or circumvent those devices.

One of the most interesting features of the program was entitled “Workshop 92.” Two men and two women from rural Indiana told of the formation and of the activities of county safety councils in rural and semiurban areas. The techniques described included propagandizing the use of seatbelts, inspections leading to the elimination of home fire risks, identification and removal of highway hazards, and the establishment of county rescue units and rural numbering systems. “Workshop 92” has outlines for organizing various types of counties, and copies of them can be secured from the National Safety Council.

SPECIFIC SUGGESTIONS FOR PHYSICIANS

Dr. Hugh A. Matthews, of Canton, North Carolina, spoke on “The Possible Role of the Practicing Physician in Accident Prevention.” More or less contradicting Dr. Fister's statement, he declared that the doctor has more opportunities than almost anyone else in the area of accident prevention, though he has no particular training for it, and of course has many other things to do.

He read the following list of questions that he believes a general practitioner should ask of each homemaker, or should investigate for himself: (1) Particularly if there are elderly people or small children in the home, are the scatter rugs

anchored? (2) If there are elderly family members, are there hand-rails on all staircases, by the bathtub and by the commode, and are the light switches beside the beds? (3) Have the elderly been instructed to sit on the edge of the bed for a moment before standing, and to stand for a moment before starting to walk? (4) Does the fireplace have a firescreen? (5) Is the heating system inspected once a year? (6) Is safe storage provided for inflammable and toxic substances, or for example, is kerosene stored in a soft-drink bottle? (7) Is there a discarded icebox or similar self-locking cabinet on the premises? (8) Are plastic bags promptly disposed of?

Dr. Matthews believes that a doctor should inspect and weed out the medicine cabinet during each of his home visits, and that when he sees patients in his office, he should routinely question them about the medications in their possession that no longer are efficacious or might get into the wrong hands. In addition, he should caution his patients regarding the storage of firearms and the hiding away of ammunition, and he should counsel senior citizens to give up their drivers' licenses, or even should report them as traffic hazards, if necessary.

Another of the highlights of the program was a group presentation by a representative of the Iowa State Department of Public Instruction, a Smith-Hughes teacher and a Mt. Ayr, Iowa, youth concerning the “Safe Corn Harvest” project. It is said that the Future Farmers of America organization has been chiefly responsible for a 50 per cent reduction in corn-picker accidents in Iowa. Last year, 4,200 FFA members interviewed individual farmers, and 3,600 people were persuaded to attend 76 meetings on corn-harvest safety.

At the banquet session, Dr. Edward R. Annis, president-elect of the AMA, spoke in opposition to Social Security financing of eldercare.

DEPRESSION IS A MAJOR THREAT TO FARMERS

On Saturday morning, April 6, the first speaker was S. P. Leinbach, M.D., of Belmond, Iowa. He reported that during 1960, accidents killed 421 farm residents in Iowa, and that only about one-fourth of that number died in traffic mishaps. He listed 10 principal causes for farm injuries: (1) carelessness; (2) unwise parental judgment; (3) misuse of power equipment; (4) poor physical health; (5) wrong age for the job; (6) drinking on the job; (7) improper storage of toxic substances; (8) fatigue and low blood-sugar level; (9) hypnosis; and (10) emotional disturbances.

Dr. Leinbach emphasized the importance of the last of these causes. He reported that the suicide rate for farmers in Iowa during a recent year was 50 per 100,000, as against 31 per 100,000 for the employed male population. The suicide rate among unskilled laborers was even higher—71 per 100,000—but he thinks that many of the individuals classed

as unskilled laborers were ex-farmers, recently forced from the land by economic problems that they were unable to solve.

He said he thinks that farmers are particularly susceptible to depression. First, having made a decision in the spring as to how much of which crops to plant or of animals to produce or buy, the farmer must follow through, even though he may find out rather promptly that his decision was the wrong one and that his whole year's work is certain to result in a loss rather than in a profit. Second, by the nature of his work, the farmer is the most isolated of men today.

He enumerated several symptoms that general practitioners and the relatives of an economically marginal farmer should watch for in him: (1) reluctance to go to town or to attend meetings and social gatherings; (2) anger or surliness for which there seems to be no adequate explanation; and (3) an inclination to over-dependency, as manifested perhaps by his letting the cows go unmilked or shirking other tasks that would take him outside the house.

Dr. Leinbach said that there is need for research into the characteristics of farm accidents, and that there is need for more safety education, but that in his opinion a principal need is for people to know and to recognize the symptoms of depression, and to know the resources that are available for its treatment.

Howard C. Klopp, Ph.D., a junior-college dean and a consultant in industrial medicine, pointed out that there are several differences between manufacturing and farming that make the accident-prevention technics that he has used of no avail in many aspects of the farm problem. One of the principles of industrial medicine is that people who are accident prone should be limited to ultra-safe jobs. But since a farmer must of necessity do a little of everything, that rule cannot be applied to him. In industry, it is the foreman's responsibility to make sure, day by day, that each workman is emotionally fit to confront the hazards that his tasks involve, and to see to it that each man makes use of the safeguards that have been prescribed. But on the farm, there are no foremen.

Dr. Klopp said, as several of the preceding speakers had done, that there is a need for training farmers, old and young, in the use of farm equipment—by the manufacturers of implements, by the parents of farm children, and by farm employers. He called particular attention to the possible inadequacy of the instructions that are issued with pieces of farm equipment. Not only must such instructions be provided, but they must be worded, printed and illustrated in such a fashion that the prospective users will read, understand and obey them.

Albert A. Lorenz, M.D., of Eau Claire, a psychiatrist in private practice, took up where Dr. Leinbach left off, by reiterating that depression is

a major cause of farm accidents, and that a principal way of preventing them is to recognize and treat them promptly. He said that he sees many farm people in his practice, and is able to care for most of them very satisfactorily, either on an outpatient basis or in an open ward in his community hospital. His hospitalizations average just 13 days, and by giving immediate attention to such cases, he has reduced by 50 per cent the numbers of people who must be sent to state hospitals. Though most depressions last a year or 18 months in middle-aged people, and can be longer in elderly ones, more or less complete rehabilitation is usual.

Dr. Lorenz added a number of items to Dr. Leinbach's list of prodromal symptoms: (1) insomnia; (2) anorexia; (3) weight-loss; (4) dryness of the throat, so that food sticks in the patient's mouth, or so that a clicking interrupts his speech; (5) gastrointestinal difficulties; (6) missing of menstrual periods, in women; and (7) turning of aggressions inward.

IN IOWA, FARM ACCIDENTS ARE MOST LIKELY TO BE FATAL

The question and answer period that concluded the Conference brought out a number of highly interesting points:

1. In farmers, there appear to be two peaks for the inception of clinical depression, concurrent with the first snow of the year and with the farmers' return to the fields in the spring.

2. The U. S. Department of Agriculture has reported that the greatest frequencies of farm fatalities, in recent years, have been in Iowa, Montana and Wisconsin. In those states, approximately 20 per cent of farm accidents were fatal ones, as contrasted with 15 per cent for the country as a whole, and with 5 per cent for the Southeastern states. Dr. Lorenz speculated that the extremes of weather are important in this disparity, e.g., in the North the furnaces must be run at full blast on a greater number of days each winter, increasing the fire hazard. Dr. Leinbach said he thinks there has been an inexplicable increase in the proportion of fatalities during recent years.

3. Dr. Leinbach said that he would like to see the establishment of retraining courses for people who are in danger of failing in agriculture. Thus if they had to leave the farms, they would not be thrown into the unskilled-labor pool.

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Tranquilizer Poisonings

July, 1959, Through December, 1960*

TRANQUILIZERS HAVE BEEN manufactured and used extensively over the past decade. As with all new products, information revealing toxicity and side effects is desirable in order that we may be enlightened as to the complications and hazards of their use in clinical medicine. To supplement such information, 968 cases of tranquilizer ingestions reported to the National Clearinghouse for Poison Control Centers from July, 1959, through December, 1960, were reviewed. The total number of cases may be divided into the following groups:

TABLE I
PSYCHOPHARMACOLOGIC AGENTS INGESTED

Group	Cases
1. Phenothiazine derivatives	378
2. Rauwolfia alkaloids	151
3. Substituted diols	280
4. Miscellaneous structure	115
5. Combined drugs	21
6. Multiple ingestion	23
Total	968

PHENOTHIAZINES

Phenothiazine derivatives constituted the largest single group of tranquilizers ingested—approximately 39 per cent of the total. To facilitate evaluation of the effects of the phenothiazines on the central nervous and on the autonomic nervous system, a structural grouping was used: (1) those with a propyl-dimethylamino subgroup, e.g. Thorazine and Sparine; (2) those with a propyl-piperazine subgroup, e.g. Trifluoperazine (Stelazine), prochlorperazine (Compazine), perphenazine (Trilafon); and (3) those with a methyl-piperidyl subgroup. Those phenothiazines whose action and usage are primarily antihistaminic were not incorporated into the study.

Most of the cases in the propyl-dimethylamino subgroup were chlorpromazine (122) and promazine (51). Children accounted for 55 per cent of the chlorpromazine ingestions and 70 per cent of the promazine ingestions. Approximately one-fourth of the children and over one-half of the adults who were reported to poison control centers following ingestion of these substances required hospitalization. Approximately 44 per cent of the cases revealed symptoms of central nervous system depression, and there were 14 instances of

coma. There were three reports of convulsions and two reports of extra-pyramidal manifestations. Interestingly, one patient was receiving the prescribed dose.

Of the 191 case reports concerning ingestions of the propyl-piperazine subgroup, trifluoperazine accounted for 49; prochlorperazine for 95; and perphenazine for 33. As would be expected with a substitution of a piperazine subgroup in place of a terminal dimethylamino moiety, there is evidence of increased extra-pyramidal stimulation. There were 13 cases of prochlorperazine ingestion with extra-pyramidal manifestations, from a total of 17 cases reported. There were seven instances of patients' seeking medical care for symptoms that had occurred while they were receiving prescribed dosages of prochlorperazine.

Of the 180 cases of dimethylamino ingestion, 44 per cent manifested symptoms of depression (drowsiness, stupor or coma). Conversely, only 17 per cent of the 191 cases involving the piperazine subgroup were felt to exhibit clinical depression. Although the tranquilizers with the piperazine subgroup are known to possess greater antiemetic activity, there were 16 reports of patients experiencing nausea or vomiting. Only three cases of nausea or vomiting had been reported in the dimethylamino subgroup. Only four cases of coma were reported subsequent to the ingestion of the piperazine subgroup, and there was a single reported case of convulsion.

RAUWOLFIA ALKALOIDS

The rauwolfia alkaloids reviewed in the study contain tertiary indole bases and are naturally-occurring or semi-synthetic. These drugs are known to produce mild depression of the central nervous system, a decrease in the sympathetic activity, and an increase in the parasympathetic activity. Today, rauwolfia alkaloids are used primarily for their effects upon the autonomic nervous system, and more specifically in the treatment of hypertensive vascular disease and thyrotoxicosis. Of the 151 cases of rauwolfia alkaloid ingestions reported, 116 cases were ingestions of reserpine, and 29 cases involved ingestion of the whole root *Rauwolfia serpentina*. A remarkably low incidence of ingestions in the young adult and adult age groups occurred (i.e., 13 + yrs. of age), representing only 4 per cent of the total number of cases reported. Although mental depression is a common (and frequently serious) behavioral side effect of the rauwolfia drugs, only four suicide attempts were reported for this group of tranquilizers.

* From the November-December, 1962, report of the National Clearinghouse for Poison Control Centers.

Symptoms were found to occur in 32 per cent of the cases reviewed, but only two cases of hypotension were noted. Of the patients manifesting symptoms, one-third had flushing of the skin. Although 40 per cent of the symptomatic patients revealed some form of central nervous system depression, there was only one reported instance of coma. Symptoms were noted in 46 per cent of the patients ingesting reserpine, and in only 10 per cent of those ingesting the whole root. The rauwolfia alkaloids are said to lower the convulsive threshold in man, and extra-pyramidal symptoms are known to occur. However, neither convulsions nor extra-pyramidal manifestations were observed in this series.

SUBSTITUTED DIOLS

Although other structurally similar drugs are now in clinical use, only the reports of meprobamate (Equanil, Miltown) and phenaglycodol (Ultran) ingestions are included in this review. Of the 280 cases reported, 276 were meprobamate. Meprobamate causes depression of the central nervous system. There is evidence that another pharmacologic effect is skeletal muscle relaxation, although its effectiveness when compared with other relaxants is controversial. There is current concern regarding how much benefit is derived from meprobamate when used in the treatment of neuroses and psychoses characterized by anxiety.

Of the reported ingestions of meprobamate, only 22 per cent were by children (up to 13 yrs. of age). This is in sharp contrast to the phenothiazines and to the rauwolfias. The 166 suicide attempts with meprobamate far exceed those with any other drugs reported upon. Hospitalization was necessary for 144 of the patients. Although the central nervous system depression resulting from meprobamate ingestion is thought to be less extensive than that produced by several of the other tranquilizers, 48 per cent of those who ingested meprobamate manifested symptoms of central nervous system depression, and there were 40 cases of coma. Three instances of convulsion were reported, and there were two instances of hypotension. Interestingly, one patient revealed a fever of unknown origin.

MISCELLANEOUS STRUCTURE

As would be expected, there are several tranquilizing drugs that do not fall into the foregoing structural groupings. Of the 115 ingestions of drugs in the miscellaneous-structure category, 43 involved chlordiazepoxide; 43 hydroxyzine; and 13 ethchlorvynol.

Chlordiazepoxide (Librium) produces central nervous system depression comparable to that which results from taking meprobamate, but less potent than that which is produced by phenothiazine derivatives. Anticonvulsant effects and skeletal muscle-relaxing properties are also attributed to this drug. Chlordiazepoxide has been used in

the treatment of chronic alcoholism because of its ability to allay withdrawal symptoms and delirium tremens. As with meprobamate, the incidence of ingestion by children was low, amounting to no more than 14 per cent of the total cases. Sixty-nine per cent of the cases were adjudged attempted suicides. Approximately 39 per cent of the patients revealed some type of central nervous system depression, and there were two cases of coma. Thirteen of the 43 patients were hospitalized. There were no cases of convulsions.

Hydroxyzine (Atarax, Vistaril) produces central nervous system depression, but like meprobamate and chlordiazepoxide, it is a less potent depressant than the phenothiazines. The skeletal muscle-relaxant properties and anti-arrhythmic properties attributed to this drug are not well demonstrated clinically. In contrast to chlordiazepoxide and meprobamate, the incidence of hydroxyzine ingestion by children is relatively high, representing 84 per cent of total cases. There were only six attempted suicides in this group. Only 7 per cent of the cases reviewed revealed manifestations of central nervous system depression, and there were no instances of coma or convulsions. Six of the patients required hospitalization.

Ethchlorvynol (Placidyl) is considered a stronger central nervous system depressant than chlordiazepoxide and hydroxyzine. Although only 13 cases of ethchlorvynol ingestion were reported, it was interesting to find that eight of the patients revealed some evidence of central nervous system depression, and that there were two cases of coma. The fact that nine of 13 cases reviewed were known to require hospitalization tends to confirm the sedative properties of this drug.

COMBINED DRUGS AND MULTIPLE INGESTION

Of the 21 cases of combined drug ingestion, 12 revealed manifestations of central nervous system depression, and 12 were known to have been hospitalized. Since the precise composition of these combined medications is unknown, it is difficult to correlate these results with those discussed above.

Of the 23 cases reviewed that were classified under "multiple ingestion," 13 patients revealed manifestations of central nervous system depression, and 13 patients were hospitalized. As might be anticipated, 16 (70 per cent) of the cases of multiple ingestions were suicide attempts.

COMMENTS

Tranquilizers represented 2.4 per cent of all poisonings reported to the National Clearinghouse for Poison Control Centers in the latter half of 1959 and in 1960. It becomes evident that the popularity of tranquilizers as suicidal agents must now rival that of the barbiturates. In general, fewer children manifested symptoms or required hospitalization than persons in the other age groups.

With the increased usage of tranquilizers and the frequent occurrence of moderate to severe

central nervous system depression consequent to overdosage, it becomes apparent that intoxication with a psychopharmacologic agent must be considered in the differential diagnosis of an unconscious patient. A knowledge of toxicity and complicating side effects is imperative in the satisfactory treatment of tranquilizer poisonings.

TRANQUILIZER INGESTIONS REPORTED TO THE IOWA
POISON INFORMATION CENTER, AUG. 1, 1960,
TO JULY 31, 1962

Phenothiazines		Substituted Diols	
Thorazine	6	Equanil	3
Sparine	1	Ultrax	1
Compazine	2	Miscellaneous	
Trilafon	2	Librium	5
Mornidine	2	Atarax	1
Phenergan	1	Placidyl	1
Rauwolfia Alkaloids		Tofranil	4
		Soma	1
		Type unknown	5
Reserpine	3		
Harmonyyl	1	Total	39

Frozen-Irradiated Nerve Grafts

Success in restoring function in severed human nerves through the use of frozen-irradiated nerve grafts from recently-deceased donors, shielded by a thin, porous plastic sheath, was reported recently by a New York University Medical Center scientist who revealed the results of seven years of laboratory research which preceded the clinical application of the method.

In a paper delivered before the Harvey Cushing Society meeting at the Sheraton Hotel, in Philadelphia on April 18, Dr. James B. Campbell, associate professor of neurological surgery at New York University Medical Center, discussed the results of laboratory experiments performed there, and with Dr. C. Andrew L. Bassett, associate professor of orthopedic surgery at Columbia University College of Physicians and Surgeons, to restore muscle function and sensation in human beings by bridging irreducible gaps in severed nerves. Dr. Campbell reported successful restoration of nerve function, providing motor function and sensation, by means of grafts of varying lengths—one as long as 5.3 inches. He and Dr. Bassett also found the method successful when surgery was performed as long as three years after the original injury.

In his discussion of the two most influential factors in the success of the experiments, Dr. Campbell noted that radiation used in sterilizing the grafts modified them at the same time, with the result that they are accepted by the body of the recipient and do not set up an inflammatory tissue reaction. The nerve tissue used in the experi-

ments and in the clinical application of the method were exposed to 2,000,000 units of radiation by the Van de Graaff accelerator at the High Voltage Research Laboratory, Department of Engineering, Massachusetts Institute of Technology. Hitherto, transplantation of nerves from one human being to another had failed because the grafts reacted as a foreign body. The frozen-irradiated nerve tissue serves a mechanical function of providing a pathway for regenerating nerve fibers and does not in itself survive in the recipient's body once the regeneration is complete.

Dr. Campbell defined the role of the porous plastic sheath, called Millipore, as that of a shield against scar tissue invasion of the grafted area. He also pointed out its value in orienting the pattern of regeneration and feels that its pores permit the passage of body fluids, providing nutrition in the early stages of regeneration.

"I would like to emphasize," said Dr. Campbell, "that this is a preliminary report of successful employment in man of Millipore-shielded, frozen-irradiated homografts in repairing transected peripheral nerves with irreducible gaps. Much remains to be learned concerning the potential of the technic. The method has not yet been successful with the central nervous system (spinal cord) or in nerves destroyed by disease."

The success of these experiments, concluded Dr. Campbell, indicates that a vital and necessary service can be rendered by the establishment of nerve banks at points throughout the country, to be available to neurosurgeons who can use the frozen-irradiated nerve segments to repair severed nerves in human beings and thus restore muscular function and sensation in the peripheral nervous system.

Dr. Campbell emphasized the following limitations for his technic:

1. Nerve grafts are of no value in restoring function to paraplegics or in patients suffering from multiple sclerosis, amyotrophic lateral sclerosis (Lou Gehrig's disease), other degenerative diseases of the nervous system, or neuritis.
2. One of the first cases, done in September, 1961, with a frozen-irradiated nerve segment, used a 3.3 inch graft and now shows full return of function. The longest graft showing signs of return in function is 5.3 inches in length.
3. Restoration of function has been noted in 8 out of 20 cases. In the remainder, sufficient time has not yet elapsed for full evaluation of the end result.
4. The Millipore sheath must be removed in a second operation because it is fragile and breaks, eventually leading to constricting scar tissue which interferes with nerve function. However, the value of Millipore early in the process of regeneration outweighs the disadvantage of a second relatively minor operation.

President's Page

In this, my first message on this page, I should like to arouse in each of you a bit of the spirit and (vigor?) that I hope will set the tenor not only for my term of office, but for the terms of those who succeed me.

It is needless to remind most of you of the many worthwhile post-graduate programs developed to keep physicians scientifically abreast of the times. But, I want to urge you to round out a good "group therapy" program for yourselves by resolving to keep informed and alert about the socio-economic and socio-political issues which are vital to our continued existence as a profession.

Of course we shall continue to support and to participate in the educational programs of the medical schools, the AAGP and the specialty groups. But also, let's utilize the facilities and possibilities of our State Society in our struggle to emerge healed and whole from our legislative and p.r. conflicts. Your Society's staff works diligently and long in an effort to disseminate ammunition for your verbal counterattack at the grass roots level—in our communities, clubs and county societies.

We *cannot afford* apathy and indifference, and there's no better way to avert apathy than to become informed, to stay informed and alert, and to be vociferous in defending our principles!

Your Society provides you with many of the essential weapons, but it is your individual responsibility to man them. The pertinent background information and data won't do either you or medicine a bit of good, if it's tossed in the wastebasket or buried on your desk. Read your JOURNAL, absorb the facts in the News Bulletins, compare notes with your colleagues and community groups and then, although we're still a *small* troop, we'll be a much more *effective* one!



President



Mr. F. P. G. Lattner, of Des Moines (left), president of Hospital Service, Inc., of Iowa (Blue Cross), was the recipient of the Iowa Medical Society's John F. Sanford Award, in recognition of his outstanding contributions in furthering voluntary health care financing. Mr. Lattner was instrumental in establishing Hospital Service, Inc., of Iowa, and he was appointed executive director when the plan was established in 1939. In 1959, he was named president. Mr. Lattner developed the first plan in the nation to offer rural enrollment, and under his guidance, Hospital Service, Inc., of Iowa has grown from 15,956 members in 1940, to over 620,000 in 1963. George H. Scanlon, M.D. (center), immediate past-president of IMS, made the presentation to Mr. Lattner. (Seated at Dr. Scanlon's right is C. V. Edwards, Sr., M.D., Council Bluffs, the new president.)



The highest honor of the Iowa Medical Society, the Merit Award for an outstanding contribution to organized medicine, was presented to John W. Billingsley, M.D. (center), of Newton, at the annual banquet. Making the presentation for the Society was S. P. Leinbach, M.D. (right), of Belmond. Dr. Billingsley has served as president and as a trustee of the Society, and has been a member of the Committee on Legislation, the Committee on Medical Education and Hospitals and the Executive Council. He had an important part in developing and enacting enabling legislation for Blue Cross, and later, for Blue Shield. He has been a member of the Blue Shield board of directors since its inception.

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

LIVING WITH EPILEPTIC SEIZURES, by *Samuel Livingston*, M.D. (Springfield, Illinois, Charles C Thomas, 1963. \$6.50).

OPHTHALMIC PLASTIC SURGERY, THIRD EDITION, by *Sidney A. Fox*, M.D. (New York, Grune and Stratton, 1963. \$19.50).

SURGERY IN WORLD WAR II: THORACIC SURGERY, VOL. I, edited by *Col. John Boyd Coates, Jr.*, MC; *Frank B. Berry*, M.D., and *Elizabeth M. McFetridge*, M.A. (Washington, D. C., Office of the Surgeon General, Department of the Army, 1963. \$4.25).

THE MANAGEMENT OF THE ANXIOUS PATIENT, by *Ainslie Meares*, M.D. (Philadelphia, W. B. Saunders Company, 1963. \$9.00).

MODERN CLINICAL PSYCHIATRY, SIXTH EDITION, by *Arthur P. Noyes*, M.D., and *Lawrence C. Kolb*, M.D. (Philadelphia, W. B. Saunders Company, 1963. \$8.00).

COUNSELING IN MEDICAL GENETICS, SECOND EDITION, by *Sheldon C. Reed*, Ph.D. (Philadelphia, W. B. Saunders Company, 1963. \$5.50).

BILHARZIASIS (CIBA FOUNDATION SYMPOSIUM), edited by *G. E. W. Wolstenholme*, O.B.E., M.A., M.B., M.R.C.P. and *Maevae O'Connor*, B.A. (Boston, Little, Brown and Company, 1963. \$11.50).

INTESTINAL BIOPSY (CIBA FOUNDATION STUDY GROUP 14), edited by *G. E. W. Wolstenholme*, O.B.E., M.A., M.B., M.R.C.P. and *Margaret P. Cameron*, M.A. (Boston, Little, Brown and Company, 1963. \$2.95).

BOOK REVIEWS

LYMPHEDEMA: CAUSES, COMPLICATIONS AND TREATMENT OF THE SWOLLEN EXTREMITY, by *Stephen A. Zieman*, M.D. (New York, Grune and Stratton, 1962. \$6.25).

Dr. Zieman has put together for us a total review of lymphedema, past and present. This condition has always been a discouraging one, because little or nothing could be done about it.

His history of attempts at treatment, correlated with the major events in the history of medicine, is most fascinating. Of course, he shows that the treatment is now being improved as a result of the advances in science and surgery.

Whether the production of new lymph channels by lymphangioplasty, as described by Dr. Zieman, will prove of lasting benefit is not yet clear, but the new channels created by this simple routine certainly make it possible at least temporarily to relieve some of the major problems in this type of patient.

Apparently Dr. Zieman had given a special presentation of this material at the 1961 Clinical Congress of Abdominal Surgeons. There is little doubt that this book constitutes a compendium of our knowledge

about the edematous patient to this moment.—*R. B. Stickler*, M.D.

BEDSIDE DIAGNOSIS, SIXTH EDITION, by *Charles Seward*, M.D. (Baltimore, The Williams and Wilkins Company, 1962. \$7.00).

This is the sixth edition of a carefully written handbook dealing with bedside diagnosis. After explaining the plan of the book, Dr. Seward discusses in its 26 chapters the important and more common symptoms which the physician will meet in his practice. Each of the common diseases is described under its chief complaint, and cross references are made when a disease has more than one main symptom. Even though the disease is described only once, it is brought to the reader's attention under all pertinent symptoms. Each chapter (and every symptom—for example, head pain, dyspnea, hematuria, etc.) is divided into the following parts: synopsis of causes (all the causes of that symptom are listed); physiology of the symptom; diagnostic approach to the symptom; and finally consideration of each as to etiology, characteristics and associated symptoms, examinations, and investigations. The final two chapters deal with drugs as causes of symptoms and the use of radioactive isotopes in diagnosis.

This book is probably best used as a reference, for it is rather tedious to read in its entirety. However, because of its completeness, it should be very useful to anyone who must review for comprehensive examinations such as state boards or Part III National Boards. I found it refreshing because of the emphasis on the symptoms rather than upon the diseases themselves. In American medical schools the subject matter is seldom taught in this manner, in spite of the fact that we must think in this manner, as Dr. Seward has outlined in his book, every time we examine a sick patient. For that reason, I recommend its use by third-year medical students as a supplement to the regular textbooks of medicine.—*H. Oliver Stoutland*, M.D.

SUICIDE AND MASS SUICIDE by *Joost Meerloo*, M.D. (New York, Grune and Stratton, 1962. \$3.75).

Following is the first paragraph of the foreword appearing in Doctor Meerloo's book: "I like the essay form. It liberates me from the limitations of scientific writings. I don't have to succumb to the scholar's compulsion to quote as many fellow-professionals as possible. I can try to get rid of scientific jargon and magical, mystifying words. . . . Above all, in the essay form, I can contradict myself and I can use emotional illogic just as frequently as scientific exactitude. Man

is, after all an ambivalent being built up of contradictions."

This description of the form of his writing is a fairly accurate one, but each reader will have his own opinion as to the merits of that form. Some will feel that his thoughts at times become bogged down in excess verbiage, with the result that the direction of his stream of thought is lost. They may object to the repetition of ideas, and prefer a more concise, straightforward style of writing.

A desire to eliminate scientific jargon has resulted at times in flowery, dramatic sections. The following is an example: "Man, who is caught up by this dangerous delusion, directs his life passively and unwittingly toward downfall and destruction. The idea of approaching catastrophe may seduce men into self-destruction. The suicidal wish has mankind in its thrall" (Page 75).

The concept of mass suicide plays a prominent part in the book, but psychiatry and psychology are still struggling with the individual potential suicide. There are situations, of course, where many individuals are faced with the same crises and choose death. Doctor Meerloo gives many examples, such as, "The six million Jews going to the gas chambers, weak, paralyzed, or in a religious ecstasy" (Page 75).

But understanding the individual's adjustment to threats and pressures, or his choice of self-inflicted death, will provide the most useful insights for understanding and treating potential suicides. The concept that each individual's feelings and habits of self-destruction, "contribute a grain of suicidal tendency to the collectivity" (Page vi), seems a useless concept to this reader. Each drop of water behind a dam contributes to the collective weight which has been considered in the construction of that dam. Each individual may contribute to the collective suicidal tendency, but mass therapy is unthinkable, except in non-intensive terms such as mass instructional media (television, books, newspapers, etc.). The contagious effect of one suicide on others is recognized, but it influences only those who are having adjustment problems which will have to be treated individually.

Any student of suicide will gain additional insights into the subject through reading this book. This reader did, and feels the increased understanding has added to his therapeutic competency. The style and form would have been totally different if the reviewer had written the book, but then he would be criticized by those who enjoy reading *reflections* on such a subject as this.—George Cerbus, Ph.D.

CURRENT THERAPY 1963, edited by Howard F. Conn, M.D. (W. B. Saunders Company, Philadelphia, 1963. \$12.50).

For those not acquainted with this yearly review of therapy, Doctor Conn has edited the annual CURRENT THERAPY for 15 years. A definite format and policies for keeping the book up to date have been established. The volume includes short discussions on modern therapeutics by over two hundred authorities. Each authority gives a short discussion of the disease in his particular field. Each year some authorities are deleted and some are added, so as to avoid stereotypism. Deletions and additions of topics are also part of a new volume, so that each year's volume is, in effect,

a new book. In the appendices are tables of Normal Laboratory Values, Drug Rosters, Pediatric Dosages, and other tables which may be of value to the clinician.

Ordinarily when a critic reviews a book, he puts in some praise and some criticism. In the present volume, it is difficult to find things to criticize. We would not be without this volume in our offices as we carry on the daily practice of medicine, for it affords easy access to modern therapeutic technics. Dr. Conn is to be highly commended once again for keeping "his volume" up to such high standards. We could not do without it.—Daniel A. Glomset, M.D.

SYNOPSIS OF PEDIATRICS, by James G. Hughes, M.D. (St. Louis, The C. V. Mosby Company, 1963. \$9.85).

Doctor Hughes has brought together an all-star cast in his editorship of this excellent synopsis. The format is excellent, the discussions are concise, and the size of the book is handy for the physician's desk. The material is up-to-date, and the compilation of so much authentic information in a synopsis is a masterful piece of editorship. I highly recommend this book to any physician practicing pediatrics.—M. E. Alberts, M.D.

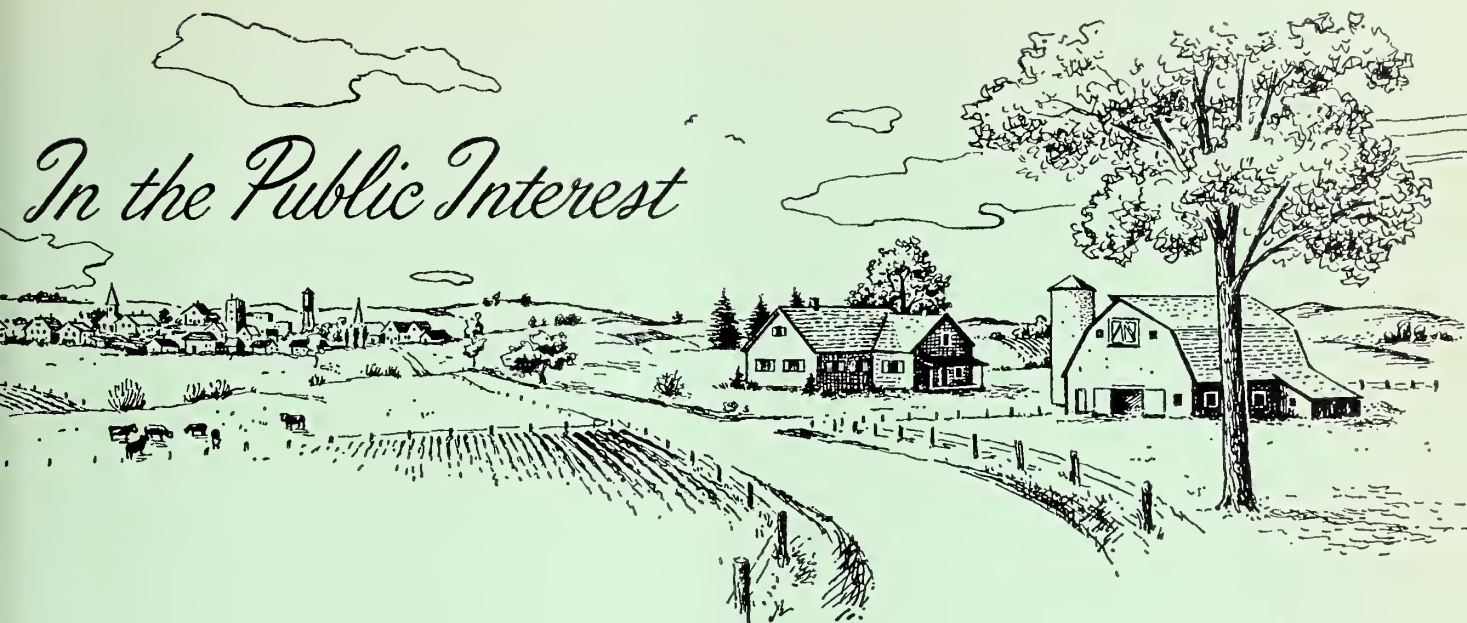
New Pamphlet on Childhood Leukemia Available to Physicians

"Childhood Leukemia—A Pamphlet for Parents," prepared for distribution by physicians to parents of leukemic children, has just been released by the National Cancer Institute, Public Health Service, Department of Health, Education, and Welfare.

The text is by Dr. Stanford Friedman, formerly of the National Institute of Mental Health and now instructor in pediatrics and psychiatry, University of Rochester; Dr. Myron Karon of the National Cancer Institute; and Mr. Gary Goldsmith of the National Institute of Mental Health. The pamphlet is intended to contribute to parents' understanding of leukemia and its treatment.

Organized in three parts, "Childhood Leukemia" includes information about the normal blood and its proper functioning; the symptoms, complications, and treatment of leukemia; and some of the problems children face during hospitalization. A glossary defines medical terms frequently used in discussing leukemia. Material for the pamphlet was drawn from a 2-year joint project of the National Cancer Institute and the National Institute of Mental Health which involved the study of the psychological and physiological adaptations to chronic stress of parents of children hospitalized for leukemia at the Clinical Center of the National Institutes of Health.

Copies of "Childhood Leukemia—A Pamphlet for Parents," available to *physicians only*, free of charge, may be obtained from the Office of Information and Publications, National Cancer Institute, Bethesda 14, Maryland.



In the Public Interest

Prospective Costs to Iowans of the King-Anderson Proposal

Some interesting statistics on what it would cost to finance the King-Anderson Bill, if enacted, have come to our attention, and we want to share them with you.

Iowa taxpayers will be forced to pay \$22,800,000 more taxes the first year alone if the Administration's King-Anderson Bill (H.R. 3920) is enacted by the 88th Congress. The \$22,800,000 figure for Iowa alone is based on the Administration's own estimates of the cost of its health care for the aged proposal. It is unbelievable that the Administration should attempt to push through Congress a tax increase of this magnitude at a time when it is advocating a tax reduction.

Insurance actuaries believe the King-Anderson Bill would cost at least twice the Administration's estimate, and in all likelihood Iowa's share of this tax load would thus be even more staggering.

These tax figures are only for the first year. They will increase substantially as the number of eligible beneficiaries increases.

The King-Anderson Bill would provide limited health care benefits for all persons 65 years of age and over who are eligible for either Social Security or Railroad Retirement benefits, plus some 2,500,000 of the aged who are not covered by those two laws. Benefits would include from 90 to 180 days of hospital care, after certain payments by the patient, or up to 45 days at no cost to the aged patient; nursing home service for up to 180 days; diagnostic

services above the first \$20; and some home health services.

The proposal would be financed by a double-barreled Social Security tax increase, plus a boost in general revenue taxes to provide benefits for all of the aged regardless of need. Social security taxes would be increased one-half of one per cent at the outset, payable half by employee and half by employer. The taxable wage base would be boosted from \$4,800 to \$5,200. A wage earner making \$5,200 or more a year, or \$100 per week, would pay \$27.50 in additional taxes, and his employer a like amount, for a total of \$55. This is a 16 per cent increase.

In addition, the wage earner and employer would pay extra taxes for benefits for the aged not covered by Social Security or Railroad Retirement. Iowa's share of this tax increase would amount to \$3,400,000.

Iowa workers now earning \$5,200 or more a year are paying \$174 in Social Security taxes. Additional Social Security tax increases already scheduled to go into effect in 1966 and 1968 will further boost their payroll deduction to \$222. If the King-Anderson Bill becomes law, these workers will have at least \$253.50 deducted from their paychecks by 1968.

Iowa workers paid \$138,200,000 in Social Security taxes in 1961 and will pay \$187,900,000 in 1965 under present law. But if King-Anderson becomes law and goes into effect in 1965, Iowa workers will

be compelled to pay \$207,300,000 in Social Security taxes, plus an additional \$3,400,000 in general revenue taxes.

Iowa will have 342,000 persons age 65 or over in 1965.

The reason the King-Anderson proposal is staggeringly costly is that it provides benefits for all persons over 65 regardless of their financial status. Its benefits would be available to millions of the well-to-do and wealthy who can well afford to pay for their own care.

The King-Anderson tax would be inequitable, falling most heavily on those least able to pay. The \$5,200-a-year factory workers would pay the same tax as the \$52,000-a-year executive for this unnecessary program.

The physicians of Iowa strongly believe that every aged person who needs health care should get it regardless of his ability to pay. They favor the Kerr-Mills Law, passed by Congress in 1960, for helping those who need help, and voluntary health insurance and prepayment plans for those who can afford them.

More than 9,500,000, or 55 per cent, of the nation's elderly already have health insurance and are buying it at a faster rate than any other age group.

By helping those who need help through the Kerr-Mills Law and letting those who can take care of themselves do so, the taxpayers of Iowa can be saved millions of dollars a year.

Passage of the King-Anderson proposal would immediately impose an unbelievable liability of \$35,000,000,000 on today's wage earners, who need their present earnings to educate their children and to provide for their own health-care needs. The \$35,000,000,000 is the government's estimate of the cost of providing King-Anderson benefits to those who would be eligible for the plan but who would not have contributed one dime to the so-called Social Security "trust fund."

We hope each of you will let your congressmen and senators know your views on this important issue, and that you will encourage others to do likewise.

Hearing Conservation

Relationships Between Hearing Loss And Noise Exposure

ARAM GLORIG, M.D.*
Los Angeles, California

The known effects of noise exposure are of two types: *non-auditory* effects which cause interference with communication by speech or which otherwise influence behavior, and *auditory* effects, which consist of temporary hearing loss and permanent hearing loss.

NON-AUDITORY EFFECTS

1. The interference of noise with speech com-

* Dr. Glorig is the Research Director of the Noise Research Center, Los Angeles, California. The Center is a project of the Subcommittee on Noise of the American Academy of Ophthalmology and Otolaryngology. This paper was invited by the Committee on the Conservation of Hearing for the State of Iowa, and it is published here with Dr. Glorig's permission.

The Committee on the Conservation of Hearing for the State of Iowa, which is presenting a series of articles in the *JOURNAL*, consults with and advises all agencies interested in the problems of hearing impairment. Its services are available to industry, agriculture, education and to the broad spectrum of public health and welfare services within the state.

The Committee has been officially sponsored by the Iowa State Department of Health since 1957. It was first formed in 1949, under the leadership of Dr. D. M. Lierle, head of the Department of Otolaryngology and Maxillofacial Surgery at S.U.I. From the first, the Committee has been interdisciplinary in composition and purpose.

The Committee presently consists of: C. M. Kos, M.D. (chairman), otologist in private practice, Iowa City; Joseph Wolvek (executive secretary), consultant, Hearing Conservation Services, State Department of Public Instruction, Des Moines; M. G. Barillas, assistant director for Special Services Division of Vocational Rehabilitation, Des Moines, Iowa; L. E. Berg, superintendent, Iowa School for the Deaf, Council Bluffs; Dale S. Bingham, consultant, Speech Therapy Services, State Department of Public Instruction, Des Moines; Paul Chestnut, M.D., private practitioner and member of AAGP, Winterset; James F. Curtis, Ph.D., head, Department of Speech Pathology and Audiology, S.U.I., Iowa City; Madeline M. Donnelly, M.D., director, Division of Maternal and Child Health, State Department of Health, Des Moines; Joseph Giangreco, assistant superintendent, Iowa School for the Deaf, Council Bluffs; Malcolm Hast, Ph.D., Department of Speech Pathology and Audiology, S.U.I., Iowa City; Byron Merkel, M.D., otolaryngologist in private practice and member of Academy of Otolaryngology and Ophthalmology, Des Moines; William Prather, Ph.D., Department of Speech Pathology and Audiology, S.U.I., Iowa City; Mrs. Jeanne Smith, Department of Otolaryngology and Maxillofacial Surgery, S.U.I., Iowa City; Edmund Zimmerer, M.D., commissioner, State Department of Health, Des Moines.

munication under a variety of conditions is well understood and can be predicted from measurements of the sound pressure level in certain octave bands of the noise.

2. The annoyance caused by noise is a highly individual phenomenon and as such is not easily predicted or measured. The fact that a noise produces annoyance does not mean that it is bad for health.

3. Efficiency in the performance of mental and motor tasks in industrial settings is only temporarily affected by exposure to unfamiliar or intermittent noises.

4. Physiological changes resulting from noise exposure lessen with repetition of the exposure. At typical industrial noise levels it appears that no unhealthy physiological reaction results even from prolonged exposures.

AUDITORY EFFECTS

Temporary Hearing Loss. Our studies of the temporary auditory threshold shift caused by noise exposure have clearly demonstrated several important facts related both to temporary threshold shifts and to permanent threshold shifts.

Some of these facts are:

1. The temporary elevation of auditory threshold which results from one day's exposure to noise levels of 100 db or more may vary from no shift to 40 db.

2. Exposure to typical industrial noise produces the largest temporary loss at 4,000 and 6,000 cycles per second.

3. The major portion of the temporary loss occurs during the first one or two hours of exposure.

4. The amount of temporary loss is roughly the same for the same person from day to day, but it varies from person to person according to a normal statistical distribution. That is, few persons have very large or very small shifts, and most of the losses cluster around an average value midway between the large and small shifts.

5. The amount of temporary loss and its fre-

quency location vary with the amount and frequency location of the permanent loss—the more the permanent loss at any frequency, the less the temporary loss at that frequency.

6. Recovery from temporary or transient hearing loss occurs mostly within the first hour or two after the noise exposure has ended.

A complete long-term study of the onset of temporary threshold shift and the recovery from temporary threshold shift is being conducted at our laboratories. We feel that there is a distinct relationship between temporary hearing loss and permanent hearing loss. There are a few things that can be said with considerable confidence about temporary threshold shift. For example, a noise which does not produce a temporary hearing loss as a result of specified exposure over a long period will probably not be greater than the temporary hearing loss produced by a specific short-term noise exposure. The configuration of the audiogram seen in the temporary threshold shift will resemble the pattern that will be found when the permanent hearing loss is measured. Obviously, these assumptions are not based on fact, since the relationship between temporary loss and permanent loss has not been validated. Such validation will be obtained from the long-term studies of serial audiograms on persons for whom temporary threshold shift studies have been made. It is not unreasonable, however, to assume that the temporary threshold shift is a reflection of the long-term process, and that some answers may be derived from the study of the temporary hearing loss produced by a specified noise exposure.

Much of the earlier work on temporary threshold shift was done with pure tones, and the relation of pure tones to broad band noise is imperfectly understood. Our research is based on the use of broad band noises such as flat spectrum white noise, and on various bands taken from white noise. In this manner, we can establish a relationship between octave band and total noise which may produce a regression equation enabling us, by a weighting formula, to predict what various industrial noises will do as a function of temporary threshold shift.

The temporary threshold shift has other important parameters.

(1) Its relation to industrial audiometry. We have stated previously that as much as 35 to 40 decibels of shift may be sustained during one work day. Obviously, if an audiogram is made at the end of the work day, prior to a rest period, this amount of temporary loss will be included, and the audiogram obtained will not be a true indication of the permanent loss. Unfortunately, all audiograms—particularly follow-up audiograms—cannot be made prior to any noise exposure. It would be ideal to do all audiograms in the morning prior to starting work. This is not practical, however, and therefore some other method must be devised for preventing

inclusion of the temporary loss in the measuring of permanent loss. So far, our research indicates that if an audiogram is made thirty minutes after leaving the noise, much of the temporary threshold shift will have disappeared.

(2) The effect of permanent loss. Preliminary data indicate that there is a definite relationship between the amount of permanent loss and the amount of temporary threshold shift. As permanent loss increases, the amount of temporary threshold shift decreases. This relationship is almost linear up to a point; if permanent loss is enough, there is no longer any temporary threshold shift.

(3) Its relation to susceptibility to noise-induced hearing loss has been based upon the amount of temporary threshold shift produced by short exposures to various types of sound. A study of these proposed tests for detecting highly susceptible ears has shown ample evidence that there is no test which will predict susceptibility to noise-induced hearing loss of any degree. Nevertheless, we are continuing the search for a susceptibility test as a secondary product of our studies on temporary threshold shift.

Let us consider for a moment the problem of susceptibility to noise-induced hearing loss. Much of the concern over the industrial noise problem has been based upon the supposition that a great many persons would be highly susceptible to noise-induced hearing loss. From our studies of several thousand auditory records, we feel that susceptibility follows a normal statistical distribution, and, therefore, that few persons are highly susceptible to noise-induced hearing loss.

An examination of the literature shows a complete lack of documented cases of sudden severe hearing loss due to continuous noise exposure. In my own experience, I have seen a few cases which were probably the result of explosive blasts such as gunfire, etc., but I have never seen a case in which continuous noise exposure has produced a severe sudden hearing loss. Undoubtedly there are a few such instances, but these will be discovered by a hearing conservation program in which monitoring audiometry is carried out in the form of follow-up hearing tests.

Permanent Hearing Loss. Long continued exposure to intense noise can produce permanent hearing loss, but the steps in the process are not well understood. The end result—namely the pathology of permanent noise-induced hearing loss—has been demonstrated in animals' ears. Noise exposure produces an inner ear damage which may vary from minor changes in the hair-cell endings to complete destruction of the organ of Corti. The mechanism of the production of this pathology is not completely known, but it appears that overstimulation by noise for long periods of time produces a metabolic change in the cell, which, in turn, causes degenerative damage to the cell structure.

The specific causal relation of hearing loss to noise exposure is very complex, and many questions must be answered before definite statements can be made about the amount of hearing loss resulting from a given noise exposure. Investigations so far have produced three particularly important points about permanent hearing loss. First, serial audiograms of persons exposed to intense noise show a characteristic progression of hearing loss. Early losses appear at frequencies between 3,000 and 6,000 cps. Usually, losses appear first at 4,000 cps and then in time spread in both directions until hearing for most of the audible frequencies is affected. The extent of the spread depends upon the amount of noise exposure sustained. Impairment of hearing is usually not noticed until losses at the speech frequencies of 500, 1,000 and 2,000 cps are 15 db or more. Substantial losses may occur at frequencies from 3,000 to 6,000 cps without producing any subjective awareness of changes in hearing. The production of noise-induced hearing loss is a slow and insidious process, and years of exposure may elapse before any significant, noticeable loss of hearing occurs.

Second, we cannot directly equate the deleterious effects of noise exposure and the energy content of the noise. That is, doubling the energy content of the noise does not double the hearing loss. We assume that the larger the total energy content of the noise, the smaller is the exposure time required to produce the same amount of hearing loss. However, the exact relation between time and energy is not known.

Third, the total amount of hearing loss produced by noise exposure depends on many more variables than was originally supposed. Hearing loss varies with the type of exposure and its degree of intermittency, with the individual exposed, with the total duration of the exposure and with the degree of consistency of use of ear protection.

Noise Exposure and Permanent Hearing Loss. Throughout this discussion we have referred to hearing loss produced by noise exposure, and not by noise itself. The concept of exposure—the length of time involved in the development of hearing loss—is important to the physician. Brief exposures to most industrial noises will produce no illness or damage to the ear. Whenever the causal relations of hearing loss to noise are considered, the physician should keep in mind each of the four factors which have a bearing on noise exposure:

1. The over-all noise level to which the man was exposed.
2. The frequency composition or spectrum of this noise, probably as expressed in octave band sound pressure levels.
3. The duration and time distribution of noise during a typical work day.
4. The total duration of the noise exposure expected during the work life.

Regarding these last two factors, consider the following: The physician is frequently confronted by persons who, in their work, are exposed to high level noises, perhaps as high as 130 or 140 db. Before drawing any conclusions about the effects of exposure to these noises, the physician must inquire carefully about the length of time the patient is subjected to the noise. Brief exposures to these noise levels will not produce severe hearing loss, or in most cases even significant hearing loss. On the other hand, the physician also encounters persons who work in lower noise levels, perhaps 100 db, and again exposure time is important. The possible effects of extended exposure to these lower levels must not be minimized. In many instances, persons who are exposed to the 100 db noise have much longer total duration of exposure than do the men who work in excessively high noise levels. If the noise level is approximately 100 db and the exposure has been long, existing hearing loss may be directly related to the noise exposure.

Some industrial noises will produce significant hearing loss only if the exposure continues for 15 to 20 years or more. Many operations that are associated with these industrial noises, however, are characterized by rapid job turnover, and the total duration of exposure for any man's ears may not be more than two or three years. Exposure to the average industrial noise for that length of time usually produces only minor changes in hearing.

These statements are based on the results of our experience with continuous noises. We know very little about the auditory effects of impulse noises such as blasts, rifle fire, or drop hammer sounds.

CRITERIA FOR HEARING CONSERVATION

On the basis of our studies we have recommended the following criteria for hearing conservation:

If the exposure to steady noise continues for five or six hours per day for ten or more years, when the levels exceed 85 db in the octave bands from 600 to 4,800 cps, a hearing conservation program should be initiated.

If the exposure is continuous but is less than five hours per day, the levels in these frequencies may be as high as 95 db depending on the length of the exposure up to five hours per day. The shorter the exposure time the higher the level down to one hour. If the exposures are intermittent and the "on" time is less than one hour, the levels may be as high as 120 db provided the "on" time does not exceed five minutes more than once a day.

Whenever the conditions outlined here are exceeded, periodic hearing tests must be done, noise control measures should be studied, and ear protection should be used if noise control does not improve the conditions to meet the criteria given above.

THE DOCTOR'S BUSINESS

How Is Your Estate Planned?

HOWARD D. BAKER

Waterloo



Although a great deal has been written on this subject, it is one that is often neglected in financial planning. Proper estate planning often involves thousands of dollars of estate-tax savings.

The marital deduction is the first step in a workable estate plan. Several years ago, provisions were enacted making it possible to reduce estate taxes substantially by proper qualification of assets. These provisions grant a deduction from the gross estate equal to the value of property passing to a spouse outright, with full power of appointment, but limited to 50 per cent of the estate valuation.

By taking advantage of this deduction, large estate-tax savings are possible, and even on smaller estates substantial savings can be effected. For example, let's take Dr. Smith, who has an estate valued at \$120,000; use of the marital deduction would provide tax savings as follows:

	Marital Ded. Not Used	Marital Ded. Used
Gross Estate	\$120,000	\$120,000
Specific Exemption	60,000	60,000
Net Estate	\$ 60,000	\$ 60,000
Less: Marital Deduction (50% of Gross Estate)		60,000
Subject to Tax	\$ 60,000	\$ None
Federal Estate Tax	9,340	
Tax Savings from Marital Ded. ...		\$ 9,340

Beware of a tax trap on larger estates. Many a man leaves his entire estate to wife. If the estate is valued at over \$120,000, this can lead to tax losses. Remember, the marital deduction is limited to 50 per cent of your estate. If you leave your wife more, the property in excess of 50 per cent

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

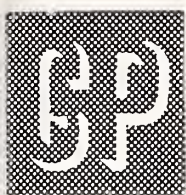
will be taxed first in your estate, and a second time in her estate, if it has not been exhausted during her lifetime. This trap can be avoided through the use of an estate plan which leaves your wife one-half of your estate outright, to qualify for the maximum marital deduction, and places the other one-half of your estate in a trust designed so as to give your wife all the benefits of the income and principal, but not to be taxable in her estate. Under such a trust, she can receive all of the income during her lifetime, and can be paid principal amounts for purposes stipulated in the trust agreement.

The remainder of the trust, upon her death, will pass untaxed to the beneficiaries originally named in your will (usually your children). Such a plan can save thousands of dollars in estate taxes. On a \$200,000 estate, the tax picture would be as follows:

	100% to Wife	50% to Wife 50% in Trust
Gross Estate	\$200,000	\$200,000
Specific Exemption	60,000	60,000
Net Estate	\$140,000	\$140,000
Marital Deduction	100,000	100,000
Doctor's Taxable Estate	\$ 40,000	\$ 40,000
Federal Estate Tax	4,800	4,800
Wife's Gross Estate*	\$195,200	\$100,000
Less: Specific Exemption	60,000	60,000
Wife's Taxable Estate	\$135,200	\$ 40,000
Estate Tax	31,000	4,800
Tax Savings by use of the Trust		\$ 26,200

* Assuming wife will live on income, and the entire principal will be retained.

Obviously, proper planning of your estate can mean many thousands of dollars of additional assets for your family. You can also see that technical errors can be quite costly. For these reasons, it is advisable to consult an attorney skilled in estate planning when you set up your program.



Iowa Chapter of the American Academy of General Practice

Fifteenth Annual Scientific Assembly of the AAGP

Chicago, Illinois, was the host city to the Fifteenth Annual Assembly of the American Academy of General Practice, April 1-4. The Congress of Delegates was called to order on March 30 for the transaction of official Academy business, and continued in session on March 31 and April 1. During the sessions of the Congress of Delegates the various commissions and committees presented their reports, resolutions were introduced, reference committees met and submitted their reports, and officers were elected for the ensuing year.

Among the highlights of the transactions was the decision by the Congress of Delegates to oppose the creation of a Board of General Practice. This culminated a ten-year consideration of that proposal. In his address, President James Murphy stated his position as follows: "I think it would be detrimental to the unity of the Academy—that we would be divided among ourselves. It would serve no greater usefulness than a certificate of proficiency. The Advisory Board to Medical Specialties has previously indicated that it would not be receptive, since general practice is not a specialty—by definition."

Another highlight was adoption by the Congress of Delegates of the Commission on Education's revised Definition of Acceptable Continuation Study. In essence this new definition drops the terms "Category I" and "Category II." The provision for sponsorship and co-sponsorship was also abolished because fundamentally it was unworkable and often abused. The backbone of the Academy, namely, Section 3, Chapter I of the By-Laws of the AAGP which states the requirements for reelection to active membership, remains the same: during the three-year period of active membership a member must complete a minimum of 150 hours of postgraduate study of a nature acceptable to the Board of Directors. The definition of "acceptable continuation postgraduate study" in its entirety will be forwarded to each state chapter for dissemination to individual members.

Another highlight was the action taken by the Congress regarding relative value schedules. After considerable debate in the reference committees, the stand of the Commission on Legislation and

Public Policy was adopted: "Resolved, That the American Academy of General Practice believes that in the best interests of the physician and his patient, the study and use of relative value schedules be considered at the local level and that no national policy of approval or disapproval be adopted."

Other important actions were taken by the Congress of Delegates, but they were far too numerous and involved for presentation in this article. The Congress of Delegates, through the use of reference committees, constitutes a truly democratic organization. In the reference committee meetings, any member of the American Academy of General Practice may have the floor to express his point of view upon any issue being discussed.

Election of officers by the Congress of Delegates resulted as follows: President-elect—Dr. Julius Michaelson, Foley, Alabama; Vice-President, Dr. Walter W. Sackett, Jr., Miami, Florida; Members of the Board of Directors for three-year terms, Dr. Maynard I. Shapiro, Chicago, Illinois, Dr. George Burkett, Kingman, Kansas and Dr. Charles G. Bryant, Louisville, Kentucky. Dr. Carroll L. Witten, Louisville, Kentucky, was re-elected by acclamation for a fourth term as Speaker of the Congress of Delegates, and Dr. John Ely, Opportunity, Washington, was elected Vice-Speaker.

Five state chapters were cited for the Academy's 1962 membership awards. The North Carolina Chapter, winner in 1961, repeated for first place award. Oklahoma and Minnesota tied for second place, and the District of Columbia and Alabama tied for third place awards.

The scientific program again was a "four star" production. It opened with a discussion "The Role of Government in Medical Care." This was a panel presentation by Dr. Durward Hall, Republican Congressman from Missouri; Mr. Ivan A. Nestingen, undersecretary of Health, Education and Welfare; and Mr. Frank T. Bow, Republican Congressman, from Ohio. The moderator was Dr. Walter H. Judd, a long-time Congressman from Minnesota. Needless to say, this was a very lively discussion, Dr. Judd being a stalwart opponent of the Administration's Social Security approach to the health care for the aged; Dr. Hall, an outspoken opponent of every effort of those who would extend government control of medicine; Mr. Nestingen presenting the Administration's viewpoint; and

Mr. Bow willing to accept neither the government's nor organized medicine's approach to medical care of the aged. Mr. Bow has submitted his own bill (HR-21) to provide benefits for persons 65 and over on a voluntary basis.

Other topics presented on the program were: The Mental Patient, Gynecology, Urology, Proctology, Respiratory Problems, Cardiac Difficulties, Dermatology, Anesthesia, Ophthalmology, Cancer Chemotherapy, Rehabilitation, and a progress report on rubeola and rubella vaccination. These all were highly informative and interesting.

The 1963 Scientific Assembly of the AAGP was, as each has been in the past, truly educational. As President Kennedy said in a telegram received by President Murphy: "Your Annual Assembly is an important step toward the ultimate goal of the best possible health for people of all ages. My sincere best wishes for a most interesting and productive meeting."

The 1964 Scientific Assembly of the AAGP will be held in Atlantic City, New Jersey, during the month of April.

New Test for Penicillin Allergy

A new and safer test for determining whether a patient is allergic to penicillin was reported by Dr. Walter B. Shelley, a Philadelphia dermatologist, in the April 20 issue of J.A.M.A. Under the new procedure, the test for a reaction is carried out in the laboratory, rather than in the patient, and only a drop of blood from the patient's fingertip is needed for analysis under a microscope.

Contrastingly, in the test now generally used, a small amount of the drug is injected into the patient's skin, and even this small amount can be hazardous for some individuals. The test itself has caused occasional fatalities, Dr. Shelley says.

The blood test for penicillin sensitivity grew out of a better understanding of the allergic reaction, he explains. Studies have shown that when a person is challenged with a substance to which he is allergic, two types of cells—the basophils in the blood and the mast cells in the skin—release histamine and disintegrate in the process. It is the release of histamine that appears primarily to be involved in the development of allergic symptoms.

When the drop of the patient's blood is mixed with a solution of penicillin under the microscope, Dr. Shelley reports, a certain percentage of the basophils can be observed to disintegrate if the individual is allergic. In severe reactions, he says that all the basophils may disintegrate either slowly or explosively, although the latter is rare. If there is a negative response, there is an absence of antibodies resistant to penicillin *on the day of the test*, and a reaction will not be triggered by any penicillin given *on that day*.

Six different techniques for performing the basophil test have been devised, including one suitable for office use, he says.

Thus far, blood samples from 275 penicillin-sensitive individuals and controls have been examined. Penicillin was given to only three patients for whom the test results had been positive, and in all three there were subsequent allergic reactions. "It remains for future experience to delineate the validity of the test more precisely," Dr. Shelley concludes.

The basophil test also has been used to detect allergy to other drugs and to horse serum, pork and eggs which are used in certain vaccines and biologicals. In addition, the basophil test affords an opportunity to reevaluate old drugs and search out new ones for the treatment of allergic reactions.

Preliminary data show that chlorpheniramine, an antihistamine, has no effect on the release of histamine by the allergic process, but it has been found that prednisolone acts directly on the cell to prevent the release of histamine.

Increase in Insurance Rates

The National Bureau of Casualty Underwriters has revised its schedules of liability insurance premiums for hospitals and for physicians and surgeons, both effective April 3. For Iowa, the increases are more than the average for the country.

For hospitals' policies, most of the increases are approximately 18 or 20 per cent, but for Iowa the increase is 37 per cent. For physicians and surgeons' professional liability policies, the rates remained unchanged for most states, but for a few states they were raised 10 per cent (Iowa among them), and for five states they were raised 25 per cent. For Missouri, Wisconsin and Mississippi, they were lowered 10 or 15 per cent.

To distribute physicians' and surgeons' professional liability insurance costs more equitably, the Bureau has ordered separate premium rates for physicians and for surgeons, in four classes. Class 1 will apply to general practitioners and certain specialists who perform no surgery; Class 2 will apply to those who perform only minor surgery; Class 3 will apply to general practitioners who perform major surgery, and to certain specialists; and Class 4 will apply to specialists in surgery and other designated specialists.

In Iowa, physicians who have been paying a premium of \$45 will now have to pay \$41 if they qualify for Class 1, or \$51 if they qualify for Class 2. Part-time surgeons who have been paying \$108 will now pay \$98, and full-time surgeons who have also been paying \$108 will have to pay \$148.

STATE DEPARTMENT OF HEALTH

Edmund G. Zimmerman
COMMISSIONER

Morbidity Report for Month of March 1963

Diseases	1963 Mar.	1963 Feb.	1962 Mar.	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	522	458	500	Cedar, Franklin, Jefferson, Johnson, Polk
Typhoid fever	0	1	0	
Smallpox	0	0	0	
Measles	1231	1308	2960	In all areas of state
Whooping cough	6	29	18	Appanoose, Polk, Scott
Brucellosis	18	17	6	Scott
Chickenpox	938	1023	315	Des Moines, Dubuque, Polk, Pottawattamie, Scott
Meningococcic meningitis	1	0	2	Woodbury
Mumps	434	303	304	Buena Vista, Polk, Pottawattamie
Poliomyelitis	0	0	1	
Infectious hepatitis	29	39	115	Jackson, Pottawattamie, Scott, Tama
Rabies in animals	29	21	53	Benton, Buchanan, Des Moines, Keokuk, Linn
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	43	21	31	For the state
Syphilis	86	59	101	For the state
Gonorrhea	101	92	146	For the state
Histoplasmosis	1	2	1	Wapello
Food intoxication	3	0	4	Woodbury
Meningitis (type unspecified)	3	2	1	Pottawattamie, Wright
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	0	0	
Salmonellosis	3	13	3	Bremer, Polk
Tetanus	0	0	0	
Chancroid	0	0	0	
Encephalitis (type unspecified)	1	0	0	Cedar
H. influenzal meningitis	1	0	1	Polk
Amebiasis	4	0	3	Boone
Shigellosis	0	2	1	
Influenza	843	9	508	In all areas of state

Measles Vaccine

The Iowa State Department of Health has received the following information dated March 21, 1963, from the U. S. Department of Health, Education and Welfare:

"Licenses for the manufacture of two types of measles vaccines were approved today by Anthony J. Celebrezze, Secretary of Health, Education and Welfare. This action was taken on the recommendation of Luther L. Terry, Surgeon General of the Public Health Service.

"Licensed firms are Merck, Sharp and Dohme, of Philadelphia, Pennsylvania, to market live attenuated measles vaccine in interstate commerce, and Chas. Pfizer & Co., Inc., of New York, New York, and Terre Haute, Indiana, to market inactivated vaccine. Today's action permits distribution of the vaccine to the nation's physicians. A limited quantity of the live vaccine will be available immediately. The killed vaccine will become available within a few weeks. It is expected that both vaccines will be generally available within several months.

"Under the National Biologics Control Act, a license for the manufacture and interstate distribution of vaccines, serums, antitoxins and similar biological products for medical use can be issued when the manufacturer demonstrates that his product meets federal standards of safety, purity and potency. Such products are tested and evaluated to see that they meet these standards by the Division of Biologics Standards of the National Institutes of Health, the research arm of the Public Health Service.

"Development of the measles vaccines stems from the work of Nobel prize winner, Dr. John Enders, of Harvard University, and an associate, Dr. Thomas Peebles, who isolated a strain of the measles virus in 1954. From this original strain of the virus, designated the Edmonston strain, both the live and the killed vaccines have been produced.

"Measles is the Number One childhood disease. Among children, measles may lead to deafness, mental crippling and pneumonia. In adults, measles is a severe and sometimes fatal disease. While measles constitutes a significant health problem in the United States, it is even more serious in other parts of the world. In Africa and South America,

for example, the death rate among children may be as high as 25 per cent."

Although the measles vaccines are currently available to physicians in small amounts, it will be several months before stocks of vaccine are plenti-

ful. The Iowa State Department of Health's budget for biologics, as set by the Legislature, is small. For this reason, we do not plan to purchase measles vaccine in the near future.

The material in the accompanying tabulation is condensed from the U. S. Public Health Service release of March 21, 1963.

DOSAGE AND ADMINISTRATION

Schedule	Type of Vaccine	Doses and Administration*	Comments
1	Live Attenuated Vaccine	1 Injection	Although the live attenuated vaccine may be administered safely with or without simultaneous administration of measles immune globulin most physicians will wish to use the two combined because of the lessened reactivity. Three weeks are required for antibody production. About 95 per cent of children immunized produces high levels of antibodies which remain high for periods of about four years. Given alone, the live attenuated virus will cause fever and a measles-like rash in about 30 per cent. Given with gamma globulin, these reactions are seen in about 10 to 15 per cent of those immunized.
2	Live Attenuated Vaccine Plus Measles Immune Globulin	1 Injection Plus Measles Immune Globulin (.01 cc/lb. at Different Site with Different Syringe)	
3	Inactivated Vaccine	3 Injections at Monthly Intervals. First Booster in About One Year.	High antibody levels are produced in 90 per cent. In view of the rapid fall-off in antibody and lack of data regarding persistence of immunity beyond six months, use of this vaccine is not preferred at this time except for special groups in which live attenuated vaccine is contraindicated.
4	Inactivated Vaccine Followed by Live Attenuated Vaccine	Pending	This approach to measles immunization appears promising; recommended schedules will be developed as more data become available.

* Manufacturers' directions regarding volume of dose should be followed.

Since poor immunity is produced in the very young, it is recommended that vaccines not be started in babies younger than nine months of age.

CONTRAINDICATIONS: Measles vaccine should not be given to children with leukemia, to pregnant women, to persons allergic to eggs, to persons with severe febrile illness or to those on certain forms of therapy which depress resistance. This latter group includes steroids, irradiation, alkylating agents and antimetabolites.

If more than 0.01 cc of gamma globulin per pound of body weight has been administered within the preceding six weeks, immunization should be deferred, since the administered globulin may block the vaccine take.

Neither measles vaccine contains penicillin.

Poliomyelitis and Related Diseases in Iowa

As compared with a total of ten paralytic cases and eight non-paralytic cases of poliomyelitis reported in Iowa for 1961, our final report for 1962 shows four paralytic and three non-paralytic cases.

Again, because of late reporting of cases or suspected cases to us, we were unable to obtain laboratory specimens for virus studies on five of the seven cases.

No large outbreaks of enteric infections caused by the Coxsackie and ECHO groups of viruses

were found in Iowa last year. The following four Coxsackie cases were found: Cerro Gordo County, 2 cases, type undetermined; Adair County, 1 case, type A9; and Polk County, 1 case, type A9. Six ECHO cases, type undetermined, were reported by the U. S. Public Health Service Regional Communicable Disease Center Laboratories at Kansas City. Three were from Cerro Gordo County, and the remaining three were reported from Jefferson, Polk and Webster Counties.

IOWA—1962

POLIOMYELITIS CASES

County	Age	Sex	Date of Onset	No. of Inj. of Vaccine	Date of Last Inj.	Lab. Studies for Virus
PARALYTIC—4 CASES						
Des Moines	23	F	1-19-62	0		Not done
Guthrie	11	M	1- 3-62	4	June 1959	Not done
Polk	38	F	3- 1-62	4	1959	No virus found
Story	14	F	10-14-62	4*	1960	Type I
NON-PARALYTIC—3 CASES						
Buchanan	38	M	5-20-62	0		Not done
Cherokee	8	M	10- 7-62	4	June 1960	Not done
Plymouth	22	F	6-11-62	1	?	Not done

* Includes one Sabin oral feeding; Type I, taken October 5, 1962

Poliomyelitis Statistics in U. S.—1962

Of a total of 702 paralytic poliomyelitis patients included in the above chart, 416 had no poliomyelitis vaccine, 106 had one or two injections, 74 had completed three and 84 were reported to have had four or more injections. In evaluating those who lacked the protection of the poliomyelitis vaccine in the cases following three or more immunizations, we would probably find that the most of

these had had no boosters in the two or three years previous to onset of their illnesses.

The following chart indicates that we are perhaps still slow in getting immunizations completed in children below the school age level, and that we have failed materially to convince persons over 20 years of age that immunizations are needed.

AGE GROUP AND VACCINATION HISTORY REPORTED ON POLIOMYELITIS SURVEILLANCE UNIT FORMS (THROUGH FEBRUARY 8, 1963)*

Age Group	Doses of Inactivated Vaccine					Total	Per Cent
	OV	1-2V	3V	4+V	Unk		
0-4	233	54	19	23	12	341	48.6
5-9	66	19	24	35	3	147	20.9
10-14	23	15	20	12	3	73	10.4
15-19	13	4	6	5	1	29	4.1
20-29	39	6	3	4	2	54	7.7
30-39	22	6	2	2	1	33	4.7
40+	20	2	0	2	1	25	3.6
Total	416	106	74	83	23	702	100.0
Per. Cent							
Doses	61.3	15.6	10.9	12.2	—	100.0	

PER CENT OF POPULATION VACCINATED WITH THREE OR MORE INOCULATIONS*

Age			Age		
(Years)	1961	Change** 1961-62	(Years)	1961	Change** 1961-62
Total					
Under 50	59.7	0.4	5-9	86.5	-0.7
			10-14	87.4	-1.2
Under 20	78.6	-0.7	15-19	76.4	2.8
Under 1	23.1	-1.3			
			20-49	39.7	1.2
1-4	74.2	-1.6	20-29	52.4	2.6
1	62.0	-1.9	30-39	45.0	-0.3
2	75.0	-2.6	40-49	22.3	1.6
3	78.8	-0.9			
4	80.9	-0.8			

* Poliomyelitis Surveillance, Communicable Disease Center, U. S. Public Health Service, Report No. 275, February 15, 1963.
** The difference between the per cent vaccinated in 1962 minus the per cent vaccinated in 1961.

Iowa Association of Medical Assistants

Collections

Your own charge accounts soared at Christmas time, but with monthly installments you have probably reduced these balances, or your tax refund enabled you to clear up the outstanding balance. But the statements you have been sending Mr. Jones and Mrs. Smith weren't for gifts of skates or a bicycle or a new doll. John Jones had an ear infection that wasn't covered by insurance, and Jeanne Smith had pneumonia, house calls and antibiotics that added to the Smiths' already past-due bill and increased their financial burden. Was the fault partially yours, for helping these folks to incur obligations? Did you suggest, "We'll be glad to put this on your bill"?

Perhaps it is embarrassing for you to talk to patients about financial matters. You may think they resent your approaching them—that you are implying that they aren't able to meet their obligations. It is easier to talk with them at the beginning of your transactions than it is to approach them when they have large, delinquent accounts. Then the patient is embarrassed and resents the fact that you did not discuss your office policy with him earlier.

Nearly every family or individual has charge accounts either with local merchants or with utility companies, and knows that payment in 30 days is considered cash, that payment within 60 days following date of purchase or service still maintains a fair credit rating, and that payment after 90 days is slow. By 90 days, the utilities may have been cut off, and other accounts have been frozen to further charges until the balance has been cleared. However, statements sent out by such business firms usually carry an explanation of credit terms: "Payable within 15 days of date of billing," or "Accounts payable at the end of the month following date of purchase." The customer knows the firm's payment policy. Does he know yours?

When the new patient registers with you, or at the conclusion of his first visit, he asks whether he should pay immediately. Is your answer, "Yes, or we shall be happy to bill you at the end of the month"? You have already given him a choice and have suggested that he postpone payment.

You might have said, "Yes, the charge today is \$4.00," and if he asked whether you prefer cash with each visit or payment by the month, you could suggest cash with the service, since it saves

your billing at the end of the month and saves him either postage or another trip to the office to pay the bill. This method of payment also prevents the accumulation of sizable accounts.

Be pleasant and positive in your actions. When the patient reaches your desk at the conclusion of her appointment, greet her with a smile, reach for your receipt book, and say, "The charge today, Mrs. Jones, is \$5.00." When she knows that you are expecting her to pay, she probably will do so. Of course, she may say that she is out of checks or has forgotten her checkbook. Do you keep a supply of checks from the various banks in your vicinity? If so, you can supply the blank check and she will pay you, since she no longer has an excuse to postpone doing so.

Many patients prefer to pay their bills monthly upon receipt of statements. If you are asked to send a statement of charges at the end of the month, be sure that you have the patient's correct name and address, that the statement is mailed in time to reach the patient on the first or second day of the month, and that the charges are itemized. A misspelled name or incorrect address may suggest to him that other aspects of your service—even the strictly medical functions performed by your doctor—are just as slipshod, and he will lose confidence in both you and the doctor. An incorrect address may also delay delivery and postpone the payment needlessly. You might think that the delay of a few days in mailing a statement wouldn't make much difference in your collections, but a glance at your daily record of accounts receivable will show you that the heaviest collections are during the first four or five days following the end of a pay period, either at the first or at the middle of the month. If your statement reaches the patient after he has finished writing his first- or fifteenth-of-the-month checks, your bill may have to wait until another payday or until another end-of-the-month rolls around.

Always itemize charges. A statement for "services rendered for the month of April—\$46.00," may seem unduly large to the patient when he has forgotten what the charges were for. An itemization showing a physical examination, office calls, laboratory procedures and medication, with a date and charge for each, and a total of \$46.00 will spare you a call from the patient asking for an explanation. More importantly, it will prevent the patient's becoming suspicious or angry—emotions that no

amount of subsequent itemization or explanation can entirely erase.

Let's suppose you have already discussed the doctor's credit policy with the patient; you have sent him itemized statements promptly each month; and he still ignores your attempts to help him maintain a good credit rating. Three statements have brought no payment, and the account is now 90 days old. The next step is a friendly, courteous letter, usually signed by you, suggesting that arrangements for payment can be made and that you will be happy to discuss the problem with him. This reminder may be all that is needed, and the bill will receive his immediate attention.

If he ignores this first letter, you write to him again. You tell him that you have been expecting to hear from him regarding the account and hope he will get in touch with you within a few days. This will probably bring either a check, a letter or a telephone call with a promise to pay.

If both of the first two letters are ignored, it is plain that he is not interested in cooperating with you. A third letter to him should say that your attempts to secure his cooperation in paying his bill have failed, and that you must turn the account over to a professional collector by a given date. If there is no response to this letter, and if you don't want to lose face, you should do as you have said you would.

What's the prescription for ailing collections? Clear explanations of credit policies, friendly cooperation in helping the patient pay, and constant vigilance over accounts. Know the "payment snails," and be prepared to give them a helpful push when needed, but don't overdo it. By overzealousness you can create ill-will towards the doctor, as well as towards yourself as his assistant.

—HELEN G. HUGHES

A New Guide for Medical Assistants

"Being a physician's aide isn't just anyone's job. It requires a special kind of girl," writes Horace Cotton in his recently published book, *AID FOR THE DOCTOR'S AIDE* (Medical Economics, Inc., Oradell, N. J., \$5.95). In it, he draws on his long experience as a medical management consultant to describe in peppery, personal style the characteristics and duties of a successful aide.

His book serves a dual purpose. It's a basic training course for new aides and a useful reference manual for established ones. Of the 250,000 aides now working in medical offices across the United States, only about one-third have been trained as nurses and technicians. And few of these have enjoyed any formal training in the art of giving good service to doctors and patients, says Mr. Cotton.

AID FOR THE DOCTOR'S AIDE sets out to remedy this lack of training. Its 24 chapters include specifically

helpful advice on pleasing patients, keeping medical records, collecting accounts, handling insurance forms and many other subjects. For instance, Mr. Cotton even suggests the words an aide can use to handle a new patient on the phone and lists some 40 things she can check to make sure the doctor's office is clean and attractive.

How important is it for a physician to have a well-trained aide? Mr. Cotton has a management man's calculated answer: "Collectively, the job of aiding the doctor is being paid for at the rate of almost \$900 million a year. Individually, each aide is actually part of the care her doctor offers to those who seek him out. So if his aide knows her job, his medical service will be the better for it."

PMA President Speaks

Some public officials have become more concerned about protecting the people against drugs and physicians than against disease, Austin Smith, M.D., president of the Pharmaceutical Manufacturers Association, declared in a recent speech before members of a Connecticut medical society.

As a consequence, Dr. Smith noted that the physician, "long hailed as a healer, personal confidante, and community leader," is now regarded with suspicion and distrust. The drug manufacturer, who has heretofore been praised as "the beneficent source of life-saving, health-giving miracles," now stands accused of "wilfully dispensing dangerous and worthless medicine and making unconscionable profits at the expense of the ill and the elderly," Dr. Smith added.

During his talk to the Fairfield Medical Association, Dr. Smith criticized the size and cost of government, a tendency toward arbitrary decisions without relying on expert advice, and growth in government-sponsored research to the detriment of basic research by private institutions.

He called on physicians to join in an effort to broaden governmental responsibility to the people, instill in government the desire to serve the people, and revive communication and confidence between elected officials and the people.

The complete text of Dr. Smith's speech may be obtained from Pharmaceutical Manufacturers Association, 1411 K Street, N.W., Washington 5, D. C.

**1963 Annual Meeting of IAMA
Burlington Hotel
Burlington, Iowa
May 3, 4 and 5**

Woman's Auxiliary News

New Officers

The following newly-elected officers were installed at the Annual Meeting of the Woman's Auxiliary to the Iowa Medical Society on April 9, 1963.

President—Mrs. G. J. McMillan, 436 Avenue C., Fort Madison



Mrs. George J. McMillan, of Fort Madison, the newly installed president of the Woman's Auxiliary to the Iowa Medical Society, has served as president of the North Lee County Woman's Auxiliary, as councilor of the eighth district of the Iowa Woman's Auxiliary, and then as president-elect.

Mary graduated from Metropolitan Hospital School of Nursing, New York City, and attended Columbia University, New York City. During World War II, she served as an Army nurse assigned to the 95th Field Hospital, China, Burma, India theatre.

She is a member of the Catholic Church and participates in its various religious and social service activities. In addition to the Auxiliary, she is active in the Iowa Nursing Association, in the Sacred Heart Hospital Auxiliary, in the Lee County Mental Health Association (serving as one of its board members) and in Chapter AY-TTT.

Her husband, Dr. McMillan, has engaged in the private practice of medicine and surgery in Fort Madison since 1951.

President-Elect—Mrs. H. G. Ellis, 5504 Shriver Avenue, Des Moines 12

1st Vice President—Mrs. Henry Boe, 3919 Orchard Street, Sioux City

2nd Vice President—Mrs. S. M. Korson, Box 111, Independence

Recording Secretary—Mrs. N. A. Schacht, 1025 North 23rd Street, Fort Dodge

Treasurer—Mrs. M. B. Cunningham, Norwalk
Councilors

District II—Mrs. J. B. Dixon, 211 Parkridge Road, Mason City

District VII—Mrs. C. E. White, Box 111, Independence

District VIII—Mrs. J. F. Bishop, 212 Hillcrest Drive, Davenport

District IX—Mrs. D. A. Mater, 302 South Fourth Street, Knoxville

District X—Mrs. G. I. Armitage, 115 West Grant Street, Osceola

The president reappointed Mrs. F. L. Poepsel, Corresponding Secretary.

Councilors are elected for four-year terms of office. However, Mrs. C. E. White and Mrs. G. I. Armitage were elected to complete terms which expire in 1965. The Councilors for Districts I, III, IV, V, VI, and XI remain unchanged.

The IMS Advisory Committee to the Woman's Auxiliary for 1963-1964 is O. D. Wolfe, M.D., Marshalltown; C. E. Radcliffe, M.D., Iowa City; and S. P. Leinbach, M.D., Belmond.

Thank You

The eighth annual dance sponsored by the Auxiliary for the benefit of its Health Educational Loan Fund was a tremendous success. Although the final total on ticket sales is not available as this goes to press, it is by far the largest amount raised from the project and could be almost double that of former years.

To all of you who made it possible, what can we say but "thank you"? We hope that you who attended the Caduceus Capers had an enjoyable evening and that all of you who bought tickets, though unable to use them, feel rewarded by having contributed to a worthwhile cause. Again, we



The State Auxiliary presented awards for volunteer community service to Mrs. George Comfort, of Des Moines (left), and to Mrs. Paul Stump, of Oskaloosa (right), during its annual convention in April. Mrs. Comfort has been active in the Mercy Hospital (Des Moines) Hospital Guild for the past 10 years, in the Polk County Chapter of the American Red Cross for 15 years, and in the activities of the Des Moines Council of Social Agencies for 6 years. Mrs. Stump's work has been in the auxiliary of the Mahaska County Memorial Hospital, among the volunteers who serve the Knoxville and Marshalltown veterans' institutions, and in the fund-raising campaigns and the chest x-ray work of the T-B and Health Association.



The three top prize-winners at the state level in the 1963 Essay Contest are Mandy Faber (left), a junior at Cardinal Stritch High School, Keokuk (second prize, \$50); Paul Kratoska, a senior in Boone High School (third prize, \$25); and Marietta Moravetz (right), a junior at the Ogden Community High School (first prize, \$100). All three wrote on the topic "The Advantages of the American Free Enterprise System Over Communism."

thank the Standard Medical and Surgical Company, of Des Moines, for "picking up the check" for the evening's expenses.

The committee will be relying on you Auxiliary members and your doctor husbands to tell young people in your communities of our Loan Fund if they are planning to enter nurses' training or allied paramedical fields. Also, your help with recommendations is most important, for you are the ones who know these young people best. This year, we promise that no well-qualified applicant will be turned down through lack of funds.—Thanks to all of you.

—H. E. L. F. Committee

Doctors' Day

Several county Auxiliaries observed Doctors' Day at the end of March. Following are some details about those of the observances that have come to the attention of the editors of the WOMAN'S AUXILIARY NEWS:

The Buchanan County Auxiliary entertained all of the physicians there at a luncheon on March 28, and presented each of them with a red carnation to wear during the remainder of the day.

On Saturday, March 31, pairs of Polk County Auxiliary members—or in some instances a physician and his Auxiliary-member wife—made calls on 26 retired doctors, at their homes, and presented them with the red carnations that are symbolic of the occasion. Mrs. Noble Irving, Jr., chairman of Community Services, was in charge of the project, and she was assisted by Mrs. Charles W. Latchem and Mrs. George S. Marquis.

Strictly speaking, March 30 is the date on which Doctors' Day is traditionally celebrated, for it was then, in 1842, when a Georgia physician, Dr. Crawford Williamson Long, administered ether in a surgical operation for the first time in medical history.

Buchanan County Auxiliary

The Woman's Auxiliary to the Buchanan County Medical Society met on Wednesday, March 13, at the Hotel Pinicon in Independence. The speaker was Dr. Richard Bealka, head of the child psychiatry department at the Mental Health Institute, and he spoke on "Emotional Problems in Children of Professional Women."

Officers of the Buchanan County organization for the coming year are: Mrs. John Mochal, president; Mrs. Richard Ingham, vice-president; and Mrs. Harry Oestreicher, secretary-treasurer.

Pottawattamie County Auxiliary

The Pottawattamie County Auxiliary met for coffee on March 19, at the home of Mrs. Emmett Mathiasen. The co-hostesses were Mrs. I. M. Ozaydin and Mrs. John Mathiasen.

The president, Mrs. Charles V. Edwards, Jr. an-

nounced that the Pottawattamie County Medical Society has established a speakers' bureau to provide speakers on medical topics or on career opportunities in medicine and allied fields to organizations that request them, and that the Auxiliary has undertaken to manage that service.

A report was made on the January collection of linen for the Visiting Nurse Association. The Auxiliary hopes to make this an annual undertaking.

Mrs. I. J. Hanssmann was named chairman for a rummage sale to be held on April 8.

This past year, Pottawattamie County Auxiliary members have made individual contributions to AMA-ERF, but it is hoped that in 1963-1964 the organization can budget a sum for a group contribution.

Mrs. Donald Hirst reported that one student nurse in Council Bluffs is presently utilizing the State Auxiliary's Loan Fund to help finance her training.

Service Is Theme of AMA Auxiliary's 40th Meeting

An address by a member of the House Ways and Means Committee, discussion of suicide prevention programs, a report on our overseas embassy of health and a special award to television actress Donna Reed will highlight the 40th annual convention of the Woman's Auxiliary to the American Medical Association.

Emphasizing community service and methods of communicating with both the profession and the public, a special program has been planned for physicians' wives attending the June 16-20 meeting at Atlantic City's Haddon Hall Hotel.

Among the speakers featured on Tuesday, June 17, will be Rep. Bruce Alger (R-Texas), who will discuss "Doctors' Concern With Federal Legislation," and Dr. William B. Walsh, president, People-to-People Health Foundation, who will report on Project HOPE activities.

Also scheduled to appear are Mr. Louis F. Lucas, executive director, National Rifle Association of America, who will outline a gun safety program designed for the local level, and Mrs. Haven Smith, chairman, Women's Activities, American Farm Bureau Federation. Mrs. Smith will emphasize the cooperative work being done in rural health by the Auxiliary and the Federation.

A report on the Auxiliary's civil defense program will highlight medical self-help training—the study for survival. Recruitment technics will be emphasized in the health careers program discussion.

Methods of telling both the medical profession and the public about Auxiliary service projects will be discussed by Mrs. Muriel Fox Aronson, vice president, Carl Byoir and Associates, a New York

public relations firm, and Robert Riley, editor, AMA NEWS. Ways of keeping the Auxiliary membership informed will also be featured.

Presiding at the meeting, which formally convenes Monday, June 16, will be Mrs. William G. Thuss, Birmingham, Ala., Auxiliary president. During the opening day session, state Auxiliary presidents will report on the outstanding state activities of the year.

A feature of the convention will be the presentation of a commendation to Donna Reed for her television portrayal of a doctor's wife. Mrs. Thuss will make the presentation at the Tuesday luncheon honoring national Auxiliary past presidents.

Guest speaker at the luncheon will be AMA President George M. Fister, M.D., Ogden, Utah. At this time, the Auxiliary's annual contribution to the nation's 86 medical schools through the AMA-Education and Research Foundation will be announced. Last year's gift was over \$240,000.

On Sunday, June 15, Mrs. Thuss and Mrs. C. Rodney Stoltz, Watertown, S.D., Auxiliary president-elect, will be honored at a tea and fashion show.

That night, Auxiliary members will attend a new program feature of the AMA annual meeting—a session on the relationship between physicians and

clergymen. Featured speakers will be The Most Rev. Fulton J. Sheen, Catholic Bishop of New York, and Dr. Edward Rynearson, of the Mayo Clinic.

Mrs. Stoltz will be installed as president at the concluding business session Wednesday morning. Election and installation of other national officers will be held then. Guest speaker will be AMA President-elect Edward Annis, M.D., Miami, Fla.

A post-convention conference for all Auxiliary members will be held Thursday, June 20. The 1963-64 programs and chairmen will be presented, and Dr. Ernest B. Howard, AMA assistant executive vice-president, will discuss principal actions of the AMA House of Delegates.

The Rev. Dr. Paul B. McCleave, director, AMA Department of Medicine and Religion, will also speak at this session, in conjunction with the presentation of a new Auxiliary program.

The convention, which is held at the same time as the AMA's 112th annual meeting, will formally adjourn at noon Thursday, June 20.

All members, their guests and guests of physicians attending the AMA meeting may participate in the general sessions and social functions of the Auxiliary. A special program has been planned for teenagers.



Sweaters were presented, on March 3, to the 1962 Fort Madison Colt League baseball champions, at Sacred Heart Hospital there. Team captain Dick Snowden (center) is shown receiving his sweater from Dr. H. B. Helling, president of the Fort Madison Medical Society, the team's sponsor, and Gerald Anderson is shown holding the championship trophy.

The Medical Society provided the necessary funds, and the North Lee County Auxiliary bought the sweaters and sewed on the numerals and the medical insignia. Both organizations feel that sponsorship of the team constitutes a worthwhile public service, and that the sweaters are helping keep people mindful of it.

Food Facts

The biggest eater in the nation is the nineteen-year-old boy who consumes 60 pounds of groceries a week. A total diet study recently completed by the Food and Drug Administration has come up with this startling piece of information. It will come only as a confirmation to anyone who has had a college freshman around the house for any length of time.

The study was aimed at determining the amount of pesticide residues and the vitamin content in the growing boy's weekly allotment of food. Samplings were taken in cities throughout the country at three-month intervals over a period of two years. The foods chosen were those recommended for the moderate income group by the Household Economics Research Division of the Department of Agriculture. The clinic kitchen of the National Institutes of Health cooked the food in the normal way.

Determinations were made for residues of 20

chlorinated hydrocarbons, including DDT, and for organic phosphate-type insecticides. Most of the samples contained either no residues or mere traces of chlorinated hydrocarbons; a few contained amounts that were only measurable by extremely sensitive technics. Only a few traces of organic phosphate were found.

Findings in regard to vitamin content in the Washington, D. C., samples for the first four quarters, are summarized in the accompanying table, with corresponding recommended dietary allowances. These findings would indicate that the Pesticide Amendment to the Federal Food, Drug, Cosmetic Act in force at present is in control of the situation and that we need not fear a "silent spring" for our youth.

The findings also support the conclusion that foods readily available at supermarkets contain ample quantities of vitamins. They contradict the allegations of food faddists that the American food supply is nutritionally depleted.

Substance	Vitamin Content in One Day's Food Supply (Average for 12 Months)	Recommended Dietary Allowance (Per Day)
Vitamin A	11,200 Int. U.	5,000 Int. U.
Thiamin	2.9 mg.	1.2 mg.
Riboflavin	4.1 mg.	1.9 mg.
Niacin	33.9 mg.	16.0 mg.
Vitamin B ₆	2.7 mg.	—
Vitamin B ₁₂	21.1 micro- grams	—

An Ounce of Prevention

Public health authorities call our attention to the fact that the declining reservoir of immunization of the American public against smallpox has reached a dangerously low level. Maintenance of protection against this serious epidemic disease requires revaccination at five-year intervals.

The rapidity of travel to and from the far places of the world where smallpox persists constantly threatens the introduction of this disease into this

These items are reprinted from the NEW YORK STATE JOURNAL OF MEDICINE, April 15, 1963.

country. Recent outbreaks in other nations are a potent warning.

The epidemic in England this year was traced to invalid vaccination certificates issued to travelers from Asia. This could have been due to false certification or, more likely, to certification before the result of the vaccination was known.

With a large number of our population lacking immunity it takes only one case to touch off an epidemic.

All physicians are urged to bring up to date the level of immunity to smallpox among their patients, whether or not the patient travels extensively.

JOURNAL

of The

IOWA MEDICAL SOCIETY



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Economic Prescriptions Unlimited

ROGER M. BLOUGH
New York City

AS YOU LOOK over the list of distinguished and authoritative speakers who have been selected to address you at this convention, you are probably wondering what a steel man is doing in the house. Well, let me assure you that your mystification is no greater than my own.

Under other circumstances, it might be assumed that your committee extended the invitation to me in a regrettable moment of mental aberration; but my boundless confidence in the medical profession compels me to reject that explanation.

Knowing something of the thoroughness with which you doctors examine personal case histories, I am inclined, rather, to conclude that your committee—in its professional pursuit of research—was motivated chiefly by a clinical interest in examining at first hand the scars, wounds and reactions of a specimen who—almost exactly a year ago—was virtually torn limb from limb as the result of an unfortunate, but well-intentioned attempt to have his company try for economic recovery. In fact, I believe that your own profession has more recently suffered the distressing ravages of a malady commonly known as Potomac Polydipsia. So perhaps we are brothers under what is left of our skins.

But if it is difficult to fathom the mental processes of those who extended this invitation to me, my readiness to accept it is much more easily explainable. It arises out of a philosophical admonition to the effect that the older you grow the more you will appreciate the wisdom of striving to live at peace with the Lord and on good terms with the medical profession. So under current circumstances, saying “no” to a doctor is a hazard I could not undertake with impunity.

Seriously, however, I welcome this opportunity to express to the members of your profession one man’s appreciation of the miraculous advances you have made in research and in the practice of medicine. Having had some association with a medical center, I have had an opportunity to see for myself your great progress in treating diseases once thought to be incurable, and in extending steadily

the average life span of your fellow man. And when the severed arm of a boy can be replaced—first the circulation, then the bone, and finally the nerves—as was done last year, then modern surgery has indeed taken giant strides in the name of human welfare. So my hat is off to the medical profession. And in fact, on occasion, everything else is off to it, too!

I did not come here today to dwell upon your great achievements or your many specialized problems. Nor do you want me, surely, to talk about my favorite subject, steel—much as I should like to do so.

Some people call a doctor when all they really want is an audience; and confronted by an audience like this, the temptation to describe the symptomatic aches and pains of the steel industry in clinical detail is almost irresistible. However, *you called me*—I didn’t call you. So as a matter of simple fairness, I must try, to the best of my ability at least, to put that temptation resolutely aside.

SELF-STYLED DIAGNOSTICIANS

Wholly apart from our respective occupational troubles, we do—as citizens—face a number of vital and complex national problems the solution to which seems hopelessly obscured in a vast welter of popular confusion. Contributing greatly to this confusion is the propensity of people everywhere to press upon their fellow man some pet prescription of their own which is guaranteed to cure his ills—be they physical or fiscal.

Let one of us develop a sniffle in his nose, a tickle in his throat, or a bronchial wheeze, and he will soon be surrounded by friendly people telling him exactly how to cure his cold. Each of these self-appointed doctors will offer a different prescription and each will proclaim to high heaven that his, alone, is infallible.

Now it may be interesting to note, in passing, that the basic—or perhaps I should say, the priceless—ingredient in many of these nostrums is a copious, almost anesthetic, measure of *spiritus frumenti*—which accounts no doubt for their unabated popularity over the centuries. It is fortunate, however, that having hit upon a specific of such universal appeal, the authors of these prescriptions were then compelled by some latent twinge of conscience to decree that the bracing ingredient be diluted copiously with scalding water and lemon juice. Thus do the vestigial remnants of a bygone puritan ethic persist in our society—Washington to the contrary notwithstanding.

Mr. Blough, chairman of the board of the United States Steel Corporation, made this presentation at the annual meeting of the Iowa Medical Society, in April, 1963.

Fortunately, of course, these homeopathic concoctions are relatively harmless; and while they will not kill the cold, they are hardly likely to kill the patient; so it matters little which one of them, if any, he may choose. Unhappily, the same cannot be said for the profusion of economic panaceas that are being pressed upon our nation today to the infinite confusion of us all.

These are strong medicines which—if taken in—advisedly—can do permanent and disastrous damage to our economy; and here again it is well to note that the basic ingredient in many of them is a substance that is far more heady than a tot of whiskey, and infinitely more habit-forming. It is the promise of something-for-nothing; and regrettably, the authors of these prescriptions—having discovered this dangerous and deceptive drug—discontinued their research without finding a way to discourage a self-indulgent patient from taking a fatal overdose.

Not all of the fiscal doctors who are purveying these prescriptions have bothered, of course, to acquire a Ph.D. in economics, and even among the Economic Doctors who *have* qualified fully in this field, there are sharp, deep-seated differences of opinion as to the proper course of treatment. While each of these economists believes sincerely—and even zealously—in the efficacy and essentiality of his own prescription, in many cases he is absolutely convinced that the treatment advocated by his fellow economists will produce fatal results.

Since there is no way of testing these concoctions with clinical precision in the laboratory, the American people today are confronted by economic prescriptions unlimited, with no warning skull-and-cross-bones on the label to guide them in making their choice.

ECONOMIC PRESCRIPTIONS EXAMINED

Now since I am neither a physician nor an economist, it is not my purpose here to compound the confusion by advancing any remedies of my own; but I would like to say a few words in behalf of the patient; for it's high time somebody did! And in that compassionate vein, let us examine some of these economic prescriptions.

Starting with the diagnosis, we are pleased to find the Economic Doctors in fairly general agreement on one point—that the patient isn't really in *extremis*—at least, not yet. Some of them believe that he will be, next year, unless drastic treatment is undertaken now. And there is no doubt that his gold count does show a disturbing decline in yellow corpuscles, which could, if unchecked, lead to pernicious fiscal anemia. But by and large, most of the doctors are inclined to show little immediate concern on this point. They are bothered chiefly by his lack of growth, and agree that it must be stimulated.

Just as proud parents used to stand their son up against the frame of the kitchen door each

year and mark off his height with a pencil, so the Economic Doctors record the growth of our body politic on a chart called the Gross National Product. They find that in the 175 years of his youth, their boy has sprung up tall among the nations of the world, but that he is no longer growing as fast as he used to. While this is entirely natural so far as the human frame is concerned, it is not to be tolerated in a healthy economic anatomy. So something has to be done about it; for grow we must.

There are, of course, different kinds of growth. To our sorrow, we learn in our advancing years that as we stop growing vertically, we tend to grow horizontally—or, perhaps circumferentially is a better word. Yet, while this tendency is sternly deplored in the medical world—to my personal knowledge—some of our Economic Doctors insist that all the patient really needs is more fat. Their prescription calls for less and less work, with more and more nourishment in the form of pay. This is a mighty palatable prescription as long as the nourishment holds out!

Then there are other kinds of growth—mental and muscular, for example. In this age of rapid technological advancement, when job opportunities for men with strong backs and untrained minds are diminishing rapidly, more education certainly must be an essential part of any well-conceived prescription. And everyone, of course, wants our nation to be strong. Unfortunately, the only effective prescription for muscular development requires plenty of exercise and hard work and thus has no popular or political appeal whatever.

Further examination of the patient reveals another fact which may bear importantly upon a proper diagnosis of the causes of his retarded growth. One section of his economic anatomy—the government section—is growing at a prodigious rate in comparison to the others. If we look at his economic charts for the past twelve years, since 1950, we find that while the Gross National Product—including government—has increased by a total of 95 per cent over this period, total government expenditures—federal, state and local—have risen 175 per cent. Expenditures of the Federal Government alone have gone up 167 per cent, and those of state and local governments have nearly trebled. So the government expenditures have grown nearly twice as fast as the total economy.

GROWTH ANALYSIS

Measured in terms of employment, the growth of government is even more startling; for while non-governmental employment has increased by about 9 per cent during these twelve years, civilian employment in government has increased 53 per cent, or nearly 6 times as fast. Today there are over 3 million more civilians on the payrolls of government than there were in 1950, and total an-

nual government expenditures have increased by more than 107 billion dollars.

To what extent this run-away growth in government may have impeded the expansion of other segments of our economy is a matter of debate, but among the Economic Doctors and the officials of the Government itself, there is universal agreement that the heavy burden of taxation is stunting our national growth and must be reduced. At this point, of course, agreement ceases abruptly. Just where, and how liberally, these soothing tax-reduction poultices are to be applied is a question now being considered in the House Ways and Means Committee.

As we study this problem of economic expansion, we are confronted by such questions as: What kind of growth, how much, and where? The population of our country is increasing at the rate of about 3 million a year, and our economy must be able to provide these additional people with the goods and services they will need and want. It must also afford them the opportunity to earn enough to pay for these goods and services. Beyond that, hopefully, it will grow enough to permit a rising standard of living for us all.

The key to the problem, it seems to me, is to stimulate the rate of growth in new job opportunities. In recent years these have been opening up at a rate of only about one per cent annually. How can we best increase that rate?

Well, here we have a considerable background of knowledge and experience to guide us. We know that no new productive job ever comes into existence except as someone saves and invests his money in the tools of production. We know that no one risks his money in this way except in the hope and expectation of earning a profit. And so, over the years, we have found that there is a direct and indisputable relationship between profits and jobs. When profits trend downward, unemployment trends upward, and when profits rise, unemployment declines.

COSTLY TREATMENT

The *creation* of a new job is costly. In manufacturing industries, we are told that on the average about \$18,000 is invested now for each job. This average encompasses a wide range—for example about \$4,000 in the clothing industry, \$23,000 in primary metals, and over \$100,000 in petroleum. The cost of *providing* a new job is much higher. For example, newspaper accounts of a steel company's investment in a new steel plant in the Chicago area would indicate investment of well over \$75,000 for each individual employee.

When dollars are invested, they may go partly into research facilities to help create new products—things that never existed before—and may thus open up whole new industries. Or these dollars may go into new plant and new, more advanced tools of production where they provide jobs first

for the men who build the plants or machines, and thereafter for all the people who use these productive facilities. If the enterprise prospers, some of its profit will be plowed back into more research facilities and into new and still better equipment so that this job-creating process is regenerative.

As this investment is multiplied in industry after industry—moreover, as production costs are reduced, and as new and improved products reach the market—America becomes more and more competitive in meeting the challenge of low-cost goods produced abroad. Markets are expanded, sales are increased and job security is enhanced, all of which not only stimulates economic growth but promises also to help correct that perplexing problem we are having with our gold corpuscles.

Taking all these things into account, and remembering that corporations today provide about two-thirds of all the non-government jobs and production in America and pay three-fourths of all the non-governmental wages and salaries, it would seem evident that new job opportunities could be stimulated greatly by merely removing the heavy penalties which have been imposed upon investment, investors, and profits during the past quarter-century in Congress.

Indeed, this is precisely the prescription which is being advanced by a few of our Economic Doctors. But the trouble with this prescription is that, while it is unquestionably good medicine from a strictly economic point of view, it lacks the ingredients necessary to make it politically palatable. Just as the businessman must cater to the demands of his customers in order to survive, so, too, must the elected government official cater to the demands of his constituents. Like the customer, the constituent is always right.

So, confronted by this prescription, a congressman finds himself in much the same situation as the girl who had just turned down a proposal of marriage. "Why won't you marry me?" the ardent suitor demanded. "There isn't anyone else, is there?"

"Oh, Elmer," sighed the young lady in despair. "There must be!"

And in this case there certainly is, for the rest of our Economic Doctors have come up with an infinite variety of prescriptions, all designed to appeal to the taste buds of the greatest possible number of constituents.

Some would have the Government do more things for more people, more frequently and more lavishly. Some would attempt to boost consumer purchasing power artificially in the hope that a rise in demand would stimulate job-creating investment in spite of the existing inhibitors we have mentioned. Some would increase these inhibitors during the next year or two with the promise of diminishing them later. And most would extend—substantially and inexorably—the size, scope, and authority of government.

A WONDER DRUG OLDER THAN PENICILLIN

One ingredient which is common to virtually all of these prescriptions is the something-for-nothing idea of continually spending more than we earn—let the day of reckoning take care of itself. So deficit spending has become the wonder drug of the moment. It will cure unemployment. It will make the patient grow. It will provide all things to all men. It will solve our every problem.

This wonder drug is not new, of course. It is centuries older than penicillin, and its inflationary side effects have proved fiscally fatal to many a nation. In fact, in the whole of our economic pharmacopeia, it would be difficult to find a more dangerous drug, or one whose use is more difficult to control; nor does there seem to be any disposition on the part of the Economic Doctors to control its use, for our nation is already relying upon increasingly massive doses of it.

Since 1950, we have taken deficit medicine in all but four years. In the fiscal year 1961, the federal deficit was about \$4 billion. Last year, in fiscal 1962, it was nearly \$6½ billion. This year it will be almost \$9 billion, and in fiscal 1964 it is expected to be around \$12 billion. That would make a total of \$31 billion in four years, and today, we are running in the red at the rate of about \$170 million *per week*.

Yet so far this fiscal year, our unemployment problem has been getting worse—not better—despite this enormous increase in the federal deficit. That should not surprise us, however, for we learned long ago that this wonder drug of deficit spending is a wholly ineffective remedy for unemployment. Significant clinical evidence on this point was provided during the depression of the 1930's.

Beginning in the fiscal year 1931 and for the balance of the period, the federal deficit averaged more than 4½ per cent of the national income, and in today's magnitudes this would mean something in the neighborhood of \$20 billion a year. In 1930, before this deficit spending began, unemployment averaged about 8½ per cent of the civilian labor force. In 1939—after nine long years of a high degree of government participation in private decision-making and of national deficits—unemployment was above 17 per cent or about twice as great as it was in the beginning.

In the face of the evidence, the notion that this deficit wonder drug is a specific for unemployment must be regarded as a myth which persists largely in the folklore of certain Economic Doctors. But the well-known inflationary side effects of this popular prescription are by no means mythical, and unless they can be prevented, the resulting inflation will almost certainly undermine national and international confidence in the dollar, increase the drain on our gold supply, and seriously aggravate our balance-of-payments problems.

The question is, *can* we prevent these dangerous side effects, and how?

Per Jacobsen notes that the late Lord Keynes, who was probably one of the earliest disciples of deficit spending, was careful, himself, to point out that this would only work if wage rates were held in check. But this point is lost sight of, and even if remembered, how is this to be done? The Government tried it in World War II and, with all the emergency powers at its command, wage rates still rose. It was like trying to put Humpty-Dumpty together again, and I suspect that all the king's horses and all the king's men cannot do it here by compulsion. Only as enlightened leaders of labor have the foresight to realize the need for such action, and the courage to take it, will wage stability be possible.

If rising wages bring higher production costs, must not rising prices inevitably follow? Will Government invoke its mighty powers to prevent this? How long—if so—will it succeed in this effort? What happens when profits—thus squeezed still further—disappear? What happens when the flow of job-creating investment stops? How will government then support the growing numbers of unemployed people? To what levels must it increase the tax burdens which already are stunting our economic growth? And to what extent must it strive to control the business decisions of all the enterprises in our land? In short where does this course lead us, save to national disaster?

THE PATIENT'S DEFENSE

Gentlemen, in my self-appointed role as defender of the patient, I would like to state a few simple truths as I see them:

The strength of our nation is the sum total of the strength of each of our 190 million people, and of the voluntary, productive groups to which they belong.

Our nation will prosper and grow only to the extent that these groups and their individual members prosper and grow; for while government can impede—or even stifle—growth, it cannot create it, legislate it or compel it, although it may, in its maturing wisdom, remove some or all of the impediments it has previously placed in the path of progress.

If every man in America does his best to provide for himself and his family to the full extent of his capacities so as not to unduly burden his neighbors and his fellow taxpayers, our nation will become increasingly strong and self-reliant.

If each productive group in America does its best to serve its customers, improve its competitive position, and provide properly for its employees and its stockholders, our national economy will grow and the rate of job opportunities will increase.

Conversely, if government does for its citizens the things that they can and should do for them-

selves, then the American people will become dependent and weak, and government will have to provide more and more of the job opportunities in unproductive pursuits at the expense of the taxpayers. And if government continues to support ever-increasing numbers of our people, the day must inevitably come when our people can no longer support the government.

Finally, it seems to me that each man necessarily knows his own business and its problems better than anyone else possibly can; that since he lives with these problems daily, he and his associates are in the best position to make decisions concerning them; and since they must bear the consequences of these decisions—be they good or bad—they alone should be responsible for them. That is why I believe that no one in government—no matter how highly placed, how well-advised, how sincere in his beliefs, or how dedicated to his purpose—should interfere with the lawful business decisions of our people.

DETRIMENTAL INTERFERENCE

My belief is not wholly without supporting evidence, and if I may be permitted now to mention the steel industry, I should like to use it as an example.

Just a year ago this week, United States Steel—confronted by rising costs over a period of nearly four years without price increases, dwindling profits, the need for expanded research, and the competitive necessity of installing new and more modern facilities in a number of its plants and product lines—announced an increase of $3\frac{1}{2}$ per cent in the general level of its steel prices. There followed a series of events which can well be described euphemistically as “circumstances beyond our control.” Following the advent of these “circumstances” our prices were lowered.

Whether that price increase might have “stuck” in the absence of the “circumstances” no one can say. Had they stuck at the time, it seems probable that in the case of some products and areas, the competitive forces of the market would later have compelled a reduction from the newly-established higher levels, but there is little doubt that the general level of steel prices would now be higher than it is.

Well, now that a year has passed—parenthetically almost five years since the last general price increase—and the actual returns are in, let's see what happened. Those who felt, no doubt sincerely, that rising production would bring higher profits which would more than offset employment-cost increases, were doomed to disappointment. The profits for the industry in 1962, in spite of some increase in production, were below even the unhappy results of 1961. This is true even though cash flow was improved by the long needed increase in depreciation. Employment was down and

three major companies in the industry were forced to reduce dividends.

Now the steel industry, of course, is a relatively small part of our national economy. It provides only about one per cent of the total employment in this country and its sales represent only $2\frac{1}{2}$ per cent of the Gross National Product. Yet it is an industry in which nearly 700,000 employees and more than a million stockholders have pooled their skills and resources in order to produce one of the basic ingredients of our modern life.

Even though many of these people have additional sources of income from other enterprises and other industries, it is at least an open question whether any action which adversely affects a group of this size does not weaken the economy of our nation, retard its growth, diminish the number of job opportunities, and subtract from the total industrial strength of America. These, then, are the results when business, facing uninvited “circumstances,” departs from decisions that make economic sense.

Others may disagree with these expressions, for personal convictions, however deep seated, are seldom acceptable to everyone. Yet they are the substance upon which free men thrive. James Russell Lowell once said: “Democracy gives every man the right to be his own oppressor.” And that is eminently true, but it follows then that men are likely to avoid this self-oppression only as they exchange ideas, acquire knowledge of the facts, debate the issues and speak out to others as you independent-minded gentlemen of medicine have done with such conviction on occasion. This, too, is the strength of America.

CONCLUSION

So concluding these observations in a somewhat lighter vein, let me summarize my defense for the patient here by reading a letter which was recently published in the *Congressional Record*. It was written to Congressman F. Bradford Morse, Republican from Lowell, Massachusetts, by Jack A. Wilson, a constituent from Winchester, and it states the case more poignantly—and certainly much more succinctly—than I have. It reads:

“Dear Congressman Morse:

“I hate to tell you my troubles, but I have tried everything else I know. I feel that only you can help me now.

“I have a dependent relative staying with me who has very little fiscal responsibility. He is very good natured and means well, but he keeps buying presents for my wife and me, and our two children. He charges these presents to my account. When he sees something that he thinks we need he buys it for us. Many of these things are not needed by us and in very few cases are they exactly what we would have bought if we had bought these things ourselves. Because he doesn't

work for a living, money doesn't mean too much to him and he tends to buy the first thing he sees and doesn't shop around like I would do if I were purchasing items. He is also quite generous to the poor and needy, but often gives to those he doesn't know who feed him a soft line.

"I just received a bill for his last spending spree and it gives me a sick, hopeless feeling. I keep

thinking how better off I would be if I could just spend that money for the things I want and could give to the people and charities I think are needy. Honestly, he does so much of my spending that I tend not to give money to charity anymore.

"He won't listen to me, but he will listen to you because he respects you. Please use your influence to cut the spending habits of my Uncle Sam."

Throckmorton Named New AMA General Counsel

Robert B. Throckmorton, legal counsel for the Iowa Medical Society since 1955, has been named general counsel for the American Medical Association, effective July 1. Mr. Throckmorton will succeed C. Joseph Stetler, who resigned to become executive vice-president and general counsel of the Pharmaceutical Manufacturers Association, in Washington, D. C. In announcing the appointment, Dr. F. J. L. Blasingame, executive vice-president of the AMA, said, "The American Medical Association is gratified that we are obtaining the services of a man with wide experience and excellent capabilities to fill the post so ably administered during the past 12 years by Mr. Stetler. Mr. Throckmorton is highly respected by both the medical and legal professions."

A native of Iowa, Mr. Throckmorton received his A.B. degree from Drake University in 1936, his LL.B. degree from Drake Law School in 1938, and his LL.M. from Harvard Law School in 1939. A member of the Iowa State and American Bar Associations and the American Law Institute, he has been in practice with the Des Moines law firm of Dickinson, Throckmorton, Parker, Mannheimer and Raife. From 1939-1942, he was in the solicitor's office of the U. S. Department of Agriculture, and the following two years he served as project attorney for the War Relocation Authority. During World War II he served in the U. S. Navy as a supply and disbursing officer aboard a destroyer. A trustee of Drake University, Mr. Throckmorton is a former chairman of the faculty and a lecturer in taxation at Drake Law School.

Mr. Throckmorton's father was a Des Moines physician who served as secretary of the Iowa Medical Society. His grandfather was a country doctor in Iowa, and his brother, Tom, is a Des Moines surgeon. Mr. and Mrs. Throckmorton have two children, Mrs. Tony Lowenberg, a student at S.U.I., and a son, Tom, who graduates from high school in Des Moines this spring.



Wilms' Tumor

HUGH L. WOLFF, M.D.,
JAMES A. HOLTE, M.D.,
DAVID A. CULP, M.D., and
RUBIN H. FLOCKS, M.D.
Iowa City

THIS PAPER represents a survey of 38 cases of Wilms' tumor seen at the University Hospitals, Iowa City, from 1934 to 1960. Other reports from the literature will be surveyed for comparison and correlation.

HISTORY

The first reported case of Wilms' tumor is credited to Rance¹ in 1814 or to Gairdner² in 1828. Eberth³ gave the first accurate description of the mixed nature of the tumor in 1872, and in 1899 Wilms wrote his classic paper describing the tumor and reporting 51 cases. His name has been associated with the tumor since that time. Numerous other terms have been assigned to the tumor, the more common being the following: *embryoma*, *nephroblastoma*, *adenosarcoma*, *embryonal adenomyosarcoma*, etc. The first nephrectomy for treatment of a Wilms' tumor is credited to Jessop⁵ in 1877, and the first cure to Israel⁶ in 1894.

ETIOLOGY

There have been many theories about the origin of the tumor, but none of them have been proved or disproved and, much confusion still exists in this regard. Fraser⁷ summarized the various theories as follows:

Dr. Wolff assisted with the survey and the preparation of this paper while serving a residency in urology at S.U.I. He has since entered private practice in San Antonio, Texas. Dr. Flocks and Dr. Culp are professor and head, and professor, respectively, in the Department of Urology. Dr. Holte, a resident in urology at the time of this survey, is currently serving in the U. S. Army Medical Corps.

1. The tumors owe their origin to the inclusion of the Wolffian tissue which has become displaced and has persisted among the cells of the developing kidney or metanephros.

2. They arise from the aberrant cells of the myotome or sclerotome.

3. Rather than being due to inclusions from extrarenal sources, they are the true kidney in which embryonic tissue has persisted and has metamorphosed into various cellular structures.

Eberth and Birch-Hirschfeld (1898)⁸ attributed the origin of the tumor to Wolffian body inclusions. Wilms felt that the tumors originate early in embryonic life from fragments of primitive undifferentiated mesodermal tissue that, in the course of development, gives rise to myotome, sclerotome and nephrotome, and that some of these cells concentrate at the site of the developing kidney, and through metaplasia, give rise to the various constituents that may be found in the tumor. Ewing⁹ explained the presence of the various components by metaplasia. The more popular theory is that the tumor arises later in developmental life, and that the embryonic tissue of the true kidney is the origin of the tumor.¹⁰

INCIDENCE

Wilms' tumor is reported to constitute 17 to 20 per cent of all malignancies in children, and is second in frequency only to neuroblastoma. Nevertheless, it is still a comparatively rare tumor. The incidence of admissions to children's hospitals has been quoted as from 1:1,450 to 1:3,000, and to general hospitals as from 1:15,000 to 1:25,000. The approximate incidence at University Hospitals is 1:15,000 admissions.

PATHOLOGY

Grossly, the tumor is usually encapsulated and presents a smooth to irregularly-lobulated or nodular surface. It is often soft, but may be solid or cystic. Generally, the tumor is demarcated from

renal substance, but it may be invasive. In most cases there is compression of renal tissue, with distortion of renal architecture and collecting systems. Its cut section is pinkish-white to yellowish-gray. Areas of hemorrhage and necrosis are common, and cystic structures are seen. The cut section often has a gelatinous or brain-like appearance and consistency. Microscopically, a variable picture is seen, but the tumor is composed primarily of two cell types in varying proportions: spindle or sarcoma-like cells, and columnar to cuboidal epithelioid cells. The latter are seen forming tubular structures with a variable degree of organization. Glomeruli of varying degrees of organization are occasionally seen. Muscle fibers, fat, cartilage, bone, and myxomatous connective tissue may be present, and vascularity is usually quite pronounced. Most authors feel that there is no prognostic significance in the histologic picture.

SEX

In our series of 38 cases there were 20 females and 18 males. Most reports cite essentially equal incidences between the sexes.

SIDE

Of 36 cases, the left side was involved in 23, or 60 per cent, and the right side in 13, or 40 per cent. Two tumors were found in horseshoe kidneys, the left side being involved in one case and the extent in the other case not having been reported.

AGE

Of the cases in this series, 80 per cent were between 1 and 5 years of age (30 cases), and the majority of these were in the 1 to 3 year group. The ages of all patients ranged from 9 months to 13 years. Other ages of diagnosis were 6, 7, and 9 years. Several Wilms' tumors have been reported in the fetus and newborn, and the tumors have been reported in adults, the oldest being in a person 83 years of age.

Age as a prognostic factor is mentioned by some authors, and they report 80 per cent survivals in patients less than one year of age, and of 70 per cent in children less than two years old. In this series, the survival in children less than two years of age was 44 per cent.

SYMPTOMS

A mass in the abdomen, found either by parents or referring physician, was the most common complaint, and was seen in 68 per cent. The next most common complaint, and often an associated one, was abdominal pain (in 32 per cent). Fatigability and hematuria were present in 18 per cent, and fever in 16 per cent. Less commonly seen were vomiting (8 per cent); weight loss and poor appetite (5.2 per cent); and cloudy urine, urinary frequency, and bloody stools (2.6 per cent each).

Age at the onset of symptomatology averaged 46 months in the entire group, and for the surviving

group it averaged 25 months (range from 18 to 45 months). Most patients were seen within one month after the onset of symptoms or the discovery of a mass.

PHYSICAL FINDINGS

The most common finding was the presence of an abdominal mass, seen in 97 per cent or 37 cases. Other less constant findings were as follows: anemia, 18 per cent; elevated blood pressure, 10 per cent; hematuria and/or pyuria, 13 per cent; dilated abdominal veins, 8 per cent; and varicocele on the ipsilateral side, 5.2 per cent. All patients with dilated abdominal veins and varicoceles died of the tumor. Hypertension has been reported in much higher incidences, and in some series it is occasionally relieved after a nephrectomy.

PYELOGRAPHY

In this, as in other series, the intravenous and retrograde pyelograms are necessary, and are found to be adequate for the diagnosis of Wilms' tumor in the vast majority of cases. Twenty-three of the thirty-three intravenous pyelograms showed function in the involved kidney, but retrograde pyelograms were necessary in only seven cases. Four cases had calcification present in the involved kidney. The opposite kidney was normal in all but three cases—two with mild hydronephrosis, and one with ptosis. The characteristic pyelographic findings for Wilms' tumor are the presence of a mass, and distortion of the collecting systems.

DIFFERENTIAL DIAGNOSIS

The presence of an abdominal mass in a child should always raise the possibility of a Wilms' tumor. In an analysis of 653 cases of abdominal masses in children, Uson and Melicow¹¹ found 42 cases of Wilms' tumor in 281 cases of "surgical lesions" (Table 1). Other possible causes for such

TABLE I
USON AND MELICOW'S SERIES OF 653 ABDOMINAL
MASSES IN CHILDREN¹¹

All masses 653 cases	Medical Conditions 372 cases 56.9%	
	Surgical Lesions 281 cases 43.1%	Non-urinary tract 142 cases 50.5%
		Urinary tract 139 cases 49.5%
		1. Wilms' tumor 42 cases 30%
		2. Hydronephrosis 56 cases 40%
		3. Cystic disease 31 cases 22%
		4. Miscellaneous 10 cases 8%

masses include neuroblastoma, fecal masses, hepatomegaly or splenomegaly, hydronephrosis, renal cystic disease, retroperitoneal lymphadenopathy, pancreatic tumors, renal or perirenal abscesses, lymphomas or leukemia, hepatic cysts or tumors, renal tuberculosis, ovarian tumors, and, in rare instances, sympathicoblastomas or schwannomas.

Extrarenal masses and hydronephrosis can usually be determined by pyelography. Polycystic disease is predominately bilateral, whereas Wilms' tumor is rarely so. The early bony metastasis from neuroblastomas can be a differential point, according to some authors.

DIAGNOSIS

Presence of an abdominal mass in association with radiographic findings of a mass associated with the kidney and distortion of the renal pelvis and/or calyces is a sufficient basis for arriving at the diagnosis of a Wilms' tumor. At the time of diagnosis, it is essential to determine the status of the unaffected kidney.

METASTASIS

Metastases from Wilms' tumor are primarily blood-borne, and most commonly are found in the lungs. Local invasion of surrounding tissue is also commonly seen. In this series, four cases had pulmonary metastasis when first seen. Metastasis occurred after irradiation and/or nephrectomy in 22 cases. Other sites of metastasis noted were the pelvis and abdomen, spine, inguinal nodes, liver and thigh. In 17 cases, the metastasis appeared within four months from the date of diagnosis, but the length of time ranged from 1 month to 115 months, and the average was 10 months after diagnosis. The longest interval occurred in a child who developed a pelvic mass 115 months after diagnosis. Biopsy proved the mass to be metastatic Wilms' tumor, and it was irradiated. The patient is now living and well 5½ years later.

Metastatic Wilms' tumor has been treated primarily with irradiation therapy. An occasional patient has received chemotherapy consisting of Actinomycin D and Cytosan, but only temporary effects have been noted. Two patients who had been treated with heavy doses of irradiation to pulmonary lesions were found, at autopsy, to have marked pulmonary fibrosis.

TREATMENT

Thirty-eight Wilms' tumor patients were seen by the University Hospitals staff from 1934 to 1960, of whom 34 had tissue diagnosis here or at other hospitals. Treatment varied, and a breakdown of the treatments, and results in this series, and the results achieved by some other authors will be compared.

In nearly all cases receiving preoperative irradiation, a marked shrinkage of the tumor was noted during the course of irradiation. In general, the

irradiation therapy was well tolerated, only a few cases of nausea and vomiting having been recorded, and none of these severe. Wound healing following irradiation and nephrectomy was good in all cases. The majority of the nephrectomies were done through a lumbar incision, and the irradiated tumors were easily removed. There was no operative mortality.

At the time of nephrectomy, ten cases of 27 had no regional extension or metastasis. The tumor, in ten cases, was attached to the peritoneum, and in three cases it was attached to bowel. Vascular invasion was present in two. Attachment to the diaphragm was seen in two cases, and involvement of mesentery, liver, and spleen in one case each.

(1) *Irradiation followed by nephrectomy:* Fifteen patients were treated in this manner. Of this number, seven are living without apparent metastasis. One patient developed metastasis 64 months after the original therapy, and eventually expired. Those living range in survival time from 3 to 20 years. Eight patients survived three years, five survived more than 5 years, and four patients have survived 10 to 20 years.

The preoperative irradiation was administered in most cases through three ports. Doses of 3,600 to 4,000r were utilized. Nephrectomy was performed 3 to 16 weeks following completion of irradiation therapy. The only growth disturbance noted following the use of irradiation in these cases was the absence of breast development on the ipsilateral side. The patients in this group who expired had survived an average of 17.5 months (6 to 64 months).

(2) *Nephrectomy with postoperative irradiation:* Of the six patients who were treated in this manner, two are living 5½ and 9 years after the initial therapy of nephrectomy. One of these had gross invasion of the renal vein at surgery. The other developed a metastatic lesion six months after nephrectomy. The pulmonary lesion was treated with irradiation therapy, and this patient is alive and well 8½ years after the appearance of a lung lesion. Those patients who died had survived an average of 15 months (4 to 22 months). The average dose of postoperative irradiation was 2,000r, and was initiated 1½ weeks postoperatively. The three- and five-year survivals in this group amounted to 33 per cent.

(3) *Nephrectomy following irradiation and chemotherapy:* One patient was treated in this manner. At the time of admission, bilateral pulmonary metastases from a Wilms' tumor that originated in the left half of a horseshoe kidney were noted. Actinomycin D and 1,700r to the left flank were administered prior to the removal of the involved kidney. The patient expired five months after the diagnosis had been established.

(4) *Preoperative irradiation, nephrectomy, and postoperative irradiation:* Three patients were treated in this manner, with no three-year sur-

TABLE 2
UNIVERSITY HOSPITALS SERIES OF WILMS' TUMOR CASES

Treatment	Cases	Living	3 Years	5 Years	10 Years
Pre-op irrad. and nephrectomy	15	7	8 (53.3%)	5 (33%)	4 (26.7%)
Nephrectomy and post-op irrad.	6	2	2 (33%)	2 (33%)	0
Irrad., Chemo Rx following nephrect.	1	0	0	0	0
Nephrectomy, pre and post-op irrad.	3	0	0	0	0
Nephrectomy only	3	0	1 (33%)	0	0
Irradiation only	9	0	1 (11.1%)	1 (11.1%)	0
No Therapy	1	0	0	0	0

vivals and an average survival of eight months. Pre-op irradiation averaged 3,700r, and post-op irradiation averaged 2,800r.

(5) *Nephrectomy only:* Three patients had nephrectomy as the only therapy. Of this group, none are living, but one patient survived 4½ years without apparent metastases and then expired suddenly of undetermined causes. The average survival of the other patients was 9½ months. The three-year survival was 33 per cent, and the five-year, 0 per cent.

(6) *Irradiation only:* Nine patients were treated with irradiation only, and there were no survivals. The average survival was 14.5 months, and the average amount of irradiation was 3,950r. One patient received 8,200r and remained free of metastasis for 32 months, but eventually developed pulmonary metastasis and died 64 months after the establishment of the diagnosis. The three- and five-year survival was, then, 11.1 per cent.

(7) *No therapy:* One patient when first seen had marked emaciation and pleural effusion, and was given no definitive therapy. Death occurred within one month.

The overall three-year survival for the entire series was 31.6 per cent, and 23.7 per cent of the patients survived five years (Table 2). The average survival time from diagnosis to death was 15 months.

DISCUSSION

In 1957, Flocks and Kadesky¹² reported on 31 Wilms' tumors seen at University Hospitals from

1926 to 1950 treated by irradiation only, and by pre-op irradiation and nephrectomy. Much of the material in this paper represents a continuation study of the 1957 series. They concluded at that time that a two-year survival is not an indication of a cure, and that pre-operative irradiation has proved useful in the treatment of these cases.

By far the greatest advance in the treatment of Wilms' tumor has been through combined use of irradiation and surgical extirpation. In 1947, Silver¹³ published a series in which seven of nine cases treated in this manner were alive 2¼ to 15 years after diagnosis. Gross and Newhauser¹⁴ in 1950, reported a series of 38 cases treated by immediate nephrectomy and postoperative irradiation, with 18 surviving two years or more. At the Mayo Clinic, Kinzel *et al.*,¹⁵ found 16 of 40 treated with combined therapy surviving three years or more, and Latimer and Melicow¹⁶ reported 12 of 31 cases of Wilms' tumor surviving three years after combined therapy.

Several extensive reviews of the literature regarding treatment and apparent cures of Wilms' tumor have been compiled, and are reproduced below for comparison (Table 3).

The results of this study and the increasing numbers of reports that are being published, strongly support the use of preoperative irradiation and surgical extirpation in conjunction for the treatment of Wilms' tumor. Preoperative x-ray therapy, as advocated by Kerr²¹ in 1939, has been utilized in the majority of cases treated at the University Hospitals, and the survival rate com-

TABLE 3
REPORTED RESULTS IN TREATMENT OF WILMS' TUMOR

Treatment	Harvey (1950) ¹⁷ 440 Cases			Scott (1954) ¹⁸ 1,141 Cases			Abeshouse (1957) ¹⁹ 434 Cases			Klapproth (1959) ²⁰ 1,351 Cases		
	No.	No.	Per	No.	No.	Per	No.	No.	Per	No.	No.	Per
	Cases	Cures	Cent	Cases	Cures	Cent	Cases	Cures	Cent	Cases	Cures	Cent
Nephrectomy only	180	28	15.5	463	87	18.8	51	2	13.0	282	59	20.9
Pre-op irrad. & nephrectomy ..	27	5	18.5	81	21	25.9	41	8	19.5	103	28	27.1
Nep. and post-op irrad.	109	33	30.5	347	83	23.9	250	38	15.2	423	111	26.2
Nephrectomy, pre & post- op irradiation	65	21	32.0	132	42	31.8	128	33	25.8	145	35	24.1

parens very favorably with those resulting from the other forms of treatment reported in the literature, as did that for the group of cases reported by Flocks and Kadesky¹² in 1957. As with all other neoplasms, early and accurate diagnosis is essential, and the prompt utilization of excretory and retrograde pyelography for differentiation of abdominal masses cannot be overemphasized.

SUMMARY

Thirty-eight cases of Wilms' tumor treated by various modes of therapy have been analyzed. Of 15 cases treated with preoperative x-ray therapy, followed by nephrectomy, seven are alive three to 20 years later, without apparent metastasis. A survey of the literature has confirmed this as the treatment of choice. The early use of excretory and retrograde pyelography in the diagnosis of abdominal masses in children has been stressed.

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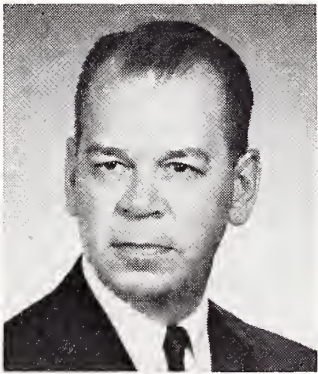
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Whatever else may shape our attitudes, surely the adventure of life comes from the anticipation of tomorrow. A doctor is touched more than most by this adventure, by the mystery and excitement of life, by the uncertainty of living and dying. If he has humility, it comes from an awareness of forces that defy not only his skill but his predictions as well. Medical history, as all history, teaches that learning and progress do not stop with us. Knowing this is our heritage. We can neither deny nor disregard it.

With this in mind, I am puzzled that so many thoughtful people share a popular alarm for the destiny of man and his children. They apparently fear that some day we shall all be smothered by irradiation or by neighbors. Either way, our fate is frightful to contemplate. But do they not forget that the future has been forbidding to every generation, and that neighbors have always been a problem? Because I cannot see my way clear does not mean that there is no way. Is the earth now enclosed by a wall, and the mind bound by a chain?

I hope that I shall never be so wise that either the outlook of the next generation, a manned flight to the moon, or faith in the future will seem foolish. For this kind of wisdom deadens the spirit, and its possessor unwittingly becomes an observer rather than a participant in the course of events, caught in a position of stagnation, a position of defeat. To yearn for yesterday is to miss the adventure of tomorrow. Somehow I can't get it out of my head that there is limitless space about us, and that ideas arise without end.



—DANIEL F. CROWLEY, JR., M.D.,
BULLETIN OF THE POLK COUNTY
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1963.

Treatment of Carcinoma of the Larynx

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Des Moines

A DISCUSSION OF THE treatment of patients with carcinoma of the larynx frequently results in controversy because of a confusion of terms arising from the classification of laryngeal lesions as "intrinsic" and "extrinsic." These terms have different meanings for some physicians than for others. The original intent of the terms *intrinsic* and *extrinsic* was to differentiate tumors arising inside the larynx from those arising outside it, although both conditions involve laryngeal structures. With the passage of time, the term *intrinsic* has become synonymous with *operable*, and now is understood by many to refer only to tumors of the vocal cord.

It has been suggested that all tumors of the endolarynx be included in a single group. They should be differentiated from tumors of the hypopharynx since they rarely metastasize to the cervical lymph nodes and have a relatively favorable prognosis. The point of origin of an endolaryngeal tumor is important because of its relationship to prognosis.

ANATOMY

The anatomical features of the larynx can be seen in Figures 1 and 2. Tumors which arise from the *inside* or *lining* of this scoop-shaped structure are those under discussion here.

Figure 3 illustrates the freedom of the vestibular region from lymphatic supply, which accounts for the infrequency of cervical lymph node metastases from this region. Even remote areas of the larynx are more likely to drain to the sub-glottic and pre-tracheal areas than to the cervical nodes.

CLASSIFICATION AND STAGING

In an effort to dispel the confusion mentioned previously, an International Committee for the

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Study of Cancer of the Larynx was formed at the Sixth International Congress of Otolaryngology held in Washington, D. C., in May, 1957. Subsequently, that Committee developed the following classification and presented it to the Seventh International Congress of Otolaryngology. It is obvious that a uniform system of classification and staging is essential if treatment methods are to be evaluated accurately. The problem of classification and staging still has not been entirely solved, but this is the method that was used in our series.

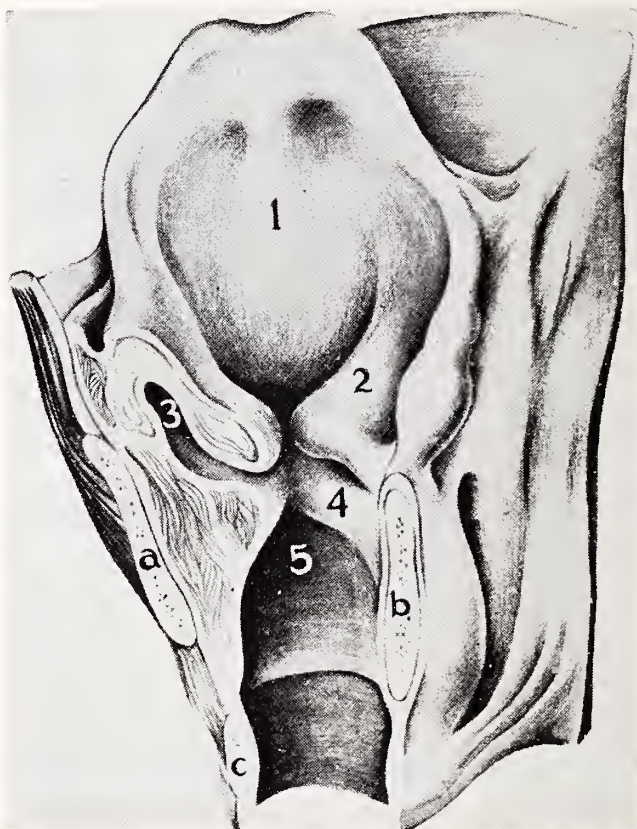


Figure 1. Posterior view of the larynx with a frontal section through the left half. 1, Laryngeal wall of the epiglottis; 2, false cord; 3, ventricle of Morgagni; 4, buccal cord; and 5, subglottic area. Notice also, a, section of the thyroid cartilage; b and c, sections of the cricoid cartilage at different levels. (Figure 261 From Ackerman and del Regato, *Cancer—Diagnosis, Treatment and Prognosis*, 3rd Edition, by permission.)

TABLE I
CLASSIFICATION AND STAGING OF
CANCER OF THE LARYNX

Anatomical Classification	
Larynx	
Superior Region	supraglottic or vestibular
Middle Region	glottic
Inferior Region	subglottic
Marginal Region	upper portion of epiglottis—ary-epiglottic fold—arytenoid
Application of TNM System	
T—Tumor	
T ₁	Tumor limited to one region without impairment of motility
T ₂	Tumor limited to one region with impairment of motility or Tumor involving two regions with or without impairment of motility
T ₃	Tumor involving more than two regions or Tumor invading the laryngeal cartilages

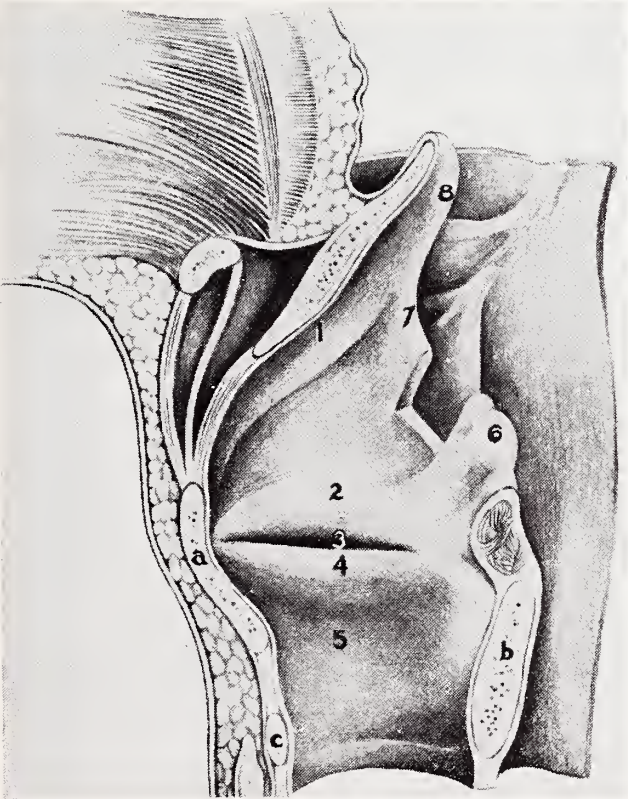


Figure 2. Lateral view of the larynx showing, a, a cross section at the anterior midline of the thyroid cartilage; b and c, sections of the cricoid cartilage; 1, the laryngeal wall of the epiglottis and its close relationship with the pre-epiglottic space; 2, false cord; 3, opening of the laryngeal ventricle; 4, true cord; 5, subglottic area; 6, arytenoid region; 7, arytenoepiglottic fold with a rectangular section to show its thickness and relationship to the piriform sinus; and, 8, free portion of the epiglottis. (Figure 262 From Ackerman and del Regato, Cancer—Diagnosis, Treatment and Prognosis, 3rd Edition, by permission.)

T ₄	Tumor extending beyond the anatomical limits of the larynx
N—Lymph Nodes	
N ₀	No palpable lymph nodes
N ₁	Homolateral movable nodes
N ₂	Contralateral or bilateral movable nodes
N ₃	Fixed nodes present
M—Distant Metastasis	
M ₀	No evidence of distant metastasis
M	Distant metastasis present
Staging	
Stage I Tumor limited to one region without impairment of motility and without palpable lymph nodes	
T ₁	N ₀ M ₀
Stage II Tumor limited to one region without impairment of motility but with homolateral movable lymph nodes or Tumor invading one region with impairment of motility	
T ₂	N ₁ M ₀
Tumor invading two regions with or without	

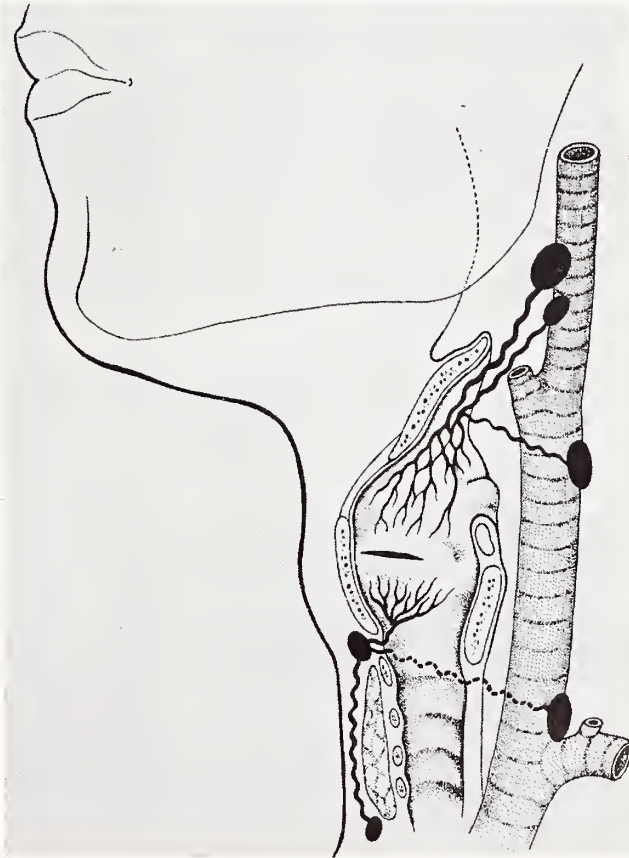


Figure 3. Lymphatics of the endolarynx. Notice the scarcity of lymphatics at the level of the glottis. The lymphatics of the supraglottic area are richer, ending in the nodes of the anterior jugular chain. The lymphatics of the subglottic area may end in a pretracheal node in the midline and rarely in a lower cervical node. (Figure 263 From Ackerman and del Regato, Cancer—Diagnosis, Treatment and Prognosis, 3rd Edition, by permission.)

impairment of motility but without palpable lymph nodes	T_2	N_0	M_0
Stage III Tumor limited to one region without impairment of motility but with bilateral or contralateral movable lymph nodes	T_1	N_2	M_0
Tumor invading one region with impairment of motility or two regions with or without impairment of motility but with homolateral movable nodes	T_2	N_1	M_0
Tumor with contralateral or bilateral movable nodes	T_2	N_2	M_0
Tumor invading more than two regions or with involvement of the thyroid or cricoid cartilage without palpable lymph nodes ..	T_3	N_0	M_0
or with homolateral movable nodes	T_3	N_1	M_0
or with bilateral or contralateral movable nodes	T_3	N_2	M_0
Stage IV Tumor extending to a neighboring organ regardless of the status of the nodes	T_4	N_{0-3}	M
Tumor regardless of extent, with fixed nodes (homolateral or bilateral)	T_{1-4}	N_3	M
Tumor regardless of extent in the presence of distant metastasis	T_{1-4}		M

Tables such as this are valuable, but are difficult to use clinically without constant reference. It is often useful to make generalizations which can easily be committed to memory. Such a generalization using the criteria of number and fixation of tumors, node involvement, invasion, and spread to other organs is suggested.

Stage I Single movable tumor

Stage II Two movable tumor areas

or
Single movable tumor with movable nodes

Fixed tumor or

Stage III Movable tumor with bilateral or contralateral nodes

or
Fixed tumor with fixed nodes

or
Cartilage invasion

Stage IV Spread to other organs

PRESENTATION OF SERIES

A total of 49 histologically diagnosed cases of carcinoma of the larynx were reviewed from the standpoint of treatment and results.

The technic of radiation therapy used was 250 kilovolts at 12 MA, STD 50 cm., HVL 2.5 mm. Cu. Treatment was given through two opposing fields as small as was consistent with the extent of the disease. Either one or two areas were treated daily. If one area was treated, 300r (in air) was given, or if two areas were treated, each received 200r (in air). The total dose in most cases ex-

ceeded 5,000r Dn, with an over-all treatment time of 30-40 days.

The surgical procedures used were partial laryn-

TABLE 2
TREATMENT OF CANCER OF LARYNX

		Stage			
		I	II	III	IV
X-ray					
Living	11	4	4	—	3
Dead	23	2	5	5	11
	—	—	—	—	—
Total	34	6	9	5	14
Surgery					
Living	4	—	3	1	—
Dead	2	—	1	—	1
	—	—	—	—	—
Total	6	—	4	1	1
Surgery + X-ray					
Living	4	1	1	—	2
Dead	3	—	—	1	2
	—	—	—	—	—
Total	7	1	1	1	4
Untreated					
Living	0	—	—	—	—
Dead	2	—	1	—	1
	—	—	—	—	—
Total	2	—	1	—	1

TABLE 3
RESULTS IN CANCER OF LARYNX

	Survival (Years)	Living	Dead
STAGE I—7 Cases	0-1	0	0
5L—2D	1-2	1	0
	2-3	0	1
	4-5	1	1
	Over 5	3	0
STAGE II—15 Cases	0-1	2	1
8L—7D	1-2	2	3
	2-3	1	1
	3-4	1	0
	Over 5	2	2
STAGE III—7 Cases	0-1	1	2
1L—6D	1-2	0	2
	3-4	0	1
	Over 5	0	1
STAGE IV—20 Cases	0-1	1	8
5L—15D	1-2	2	5
	2-3	1	1
	Over 5	1	1

gectomy (laryngofissure), total laryngectomy and radical lymph node dissection.

The division of cases among the various forms of treatment is presented in Table 2. The survival times of all patients according to the stage of the

TABLE 4
FIVE-YEAR SURVIVALS IN CASES OF
CANCER OF LARYNX

	X-Ray	Surg.	Both	Surv. Rate
STAGE I				
4 Cases	2		1	75.0%
STAGE II				
6 Cases	2	2		66.6%
STAGE III				
6 Cases	1			16.6%
STAGE IV				
10 Cases			1	10.0%
TOTALS: 26 Cases; 9 Survivals; 34.5% Rate				

TABLE 5
CAUSE OF DEATH IN CASES OF
CANCER OF LARYNX

STAGE I	Cases	STAGE II	Cases
PRIMARY CA	0	PRIMARY CA	4
Heart disease	2	Suicide	1
	—	Ca, lung	1
Total	2	Ca, rectum	1
		Total	7
STAGE III	Cases	STAGE IV	Cases
PRIMARY CA	5	PRIMARY CA	15
Heart disease	1		
	—		
Total	6		

disease are presented in Table 3. Much of the significance of the data in that table is questionable because of the inclusion of recent cases.

In Table 4 can be found the five-year survival in 26 cases, with consideration of the stage of the disease and the form of treatment.

The causes of death, according to the stage of the disease, are presented in Table 5. It will be noted that four patients with Stage II disease died of carcinoma. All of these patients received radiation therapy. A review of these cases indicates that one patient survived 7 years and 9 months. The cause of death, as determined at autopsy, was recurrent tumor and myocardial infarction. One patient died 1 year and 8 months following the diagnosis. The total amount of radiation he received was 2,000r (air). Inadequate dosage was probably the cause of failure.

Two patients died following adequate dosages of radiation. One died 2 years and 9 months following primary irradiation of 6,600r (air), followed by two courses of 2,000r in air. The other patient died after 1 year and 10 months, of recurrent tumor and distant metastases following an adequate radiation dosage of 5,110r to the tumor.

The question arises, "Might surgical treatment have been effective in these cases?"

DISCUSSION

When the anatomical limits of laryngeal carcinoma are understood by all concerned, disagreements over treatment policy are often avoided. It is generally agreed that radiation therapy is most useful in supraglottic lesions, and that surgical treatment is to be preferred in subglottic lesions. The usual area of controversy concerns glottic lesions. The basic problem is to weigh the value of voice preservation against that of survival.

In our series, the following treatment policy has evolved:

- Stage I —Results of radiotherapy are good, and desirability of voice preservation favors radiotherapy over surgery.
- Stage II —Although the results of radiotherapy were good in this series, there were two deaths following adequate radiation dosage. Surgery might have been life-saving in these cases. Patients treated by radiation should be followed closely during treatment. If regression and complete disappearance of the lesions do not occur within 2-4 weeks after the end of treatment, laryngectomy should be performed. There should be a close follow-up at three-month intervals during the first year, with laryngectomy indicated at the first sign of recurrence.
- Stage III—Surgical treatment should be undertaken whenever feasible, with combined radiation and surgery to secondary areas.
- Stage IV—Radiotherapy to the primary lesions, and radiotherapy or surgery to secondary lesions, are indicated.

SUMMARY

1. The anatomical considerations of carcinoma of the endolarynx have been reviewed.
2. Classification and staging of these lesions have been discussed, and a simplified outline has been offered.
3. A series of 49 cases of carcinoma of the endolarynx has been presented, with an analysis of the results of treatment.
4. A policy of treatment has been recommended.

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A Comparison Between Undesirable Reactions To Extracted Pertussis Antigen and to Whole-Cell Antigen in D.P.T. Combinations

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FROM ITS INCEPTION, the use of D.P.T. has been associated with a high percentage of undesirable reactions, ranging from very mild to fatal. Table 1 reviews the various types of reactions to D.P.T. reported in the literature,^{1, 2, 3}

The great majority of the local and systemic reactions are immediate, having their onsets after injection and terminating within 48 to 72 hours. Allergic manifestations may be immediate or delayed. Rarely, local and systemic reactions have produced permanent sequelae. Subcutaneous fat necrosis (also called draining cyst or sterile abscess) which may occur at the site of the injection is usually non-tender after a few days, but may re-

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TABLE 1^{1, 2, 3}
REACTIONS TO D.P.T.

Local:	
	Inflammation (heat, redness, swelling, pain, tenderness)
	Draining cysts (sterile abscesses, fat necrosis)
Systemic:	
	Irritability
	Anorexia or vomiting
	Fever or febrile convulsions
	Lethargy or malaise
Allergic:	
	Skin (rash, eczema, etc.)
	Respiratory (rhinitis, asthma, etc.)
	Anaphylactic
Central Nervous System:	
	Encephalitis without sequelae
	Encephalitis with sequelae (mental retardation, behavior disorder, cerebral palsy, etc.)
Provocation of Paralytic Poliomyelitis	

main palpable for several weeks.³ Upon resolving, the necrotic area may cause a dimpling of the skin that is usually transient. Rarely, the liquifaction may require incision and drainage. A more severe sequela has been noted after the administration of D.P.T. to susceptibles during the polio season. It has been known to provoke paralytic poliomyelitis, with paralysis occurring in the injected limb.¹ Fortunately the most serious reaction, encephalopathy, is extremely rare. Only 100 such cases have been reported in the world's literature in the past 25 years.¹

The factors involved or believed to be involved in the production of these reactions are numerous. In general they can be divided into three categories.

1. *Vaccine composition:* Reactions, particularly systemic ones, are increased if antigens have been prepared from bacteria or toxins produced from culture media utilizing blood products. They are also augmented by an increase in number of bacteria or amount of toxoid injected into the patient. Although the use of aluminum potassium sulfate (alum) as an adjuvant reduces the number of pertussis organisms required, it also creates a large proportion of reactions and perhaps provokes poliomyelitis.¹

2. *Vaccine administration:* Vaccines containing alum tend to produce increased local reactions when injected into subcutaneous tissue. The reaction is of an inflammatory type, and is not often seen with deep intramuscular injections.^{1, 3}

3. *Individual idiosyncracies:* The individual characteristics which predispose people to these reactions are numerous. The best understood example of this is the allergic reaction of some individuals to protein material in the vaccine. Effects on the thermoregulatory mechanism or autonomic nervous system may also be involved, as well as local tissue changes, because of the presence of a foreign substance.

EXTRACTED PERTUSSIS ANTIGEN

Extracted pertussis antigen was developed 10 years ago.^{4, 5} Clinical studies performed in the last three years have indicated that it has a po-

tency equal to that of the whole-cell vaccine, and with decreased local and systemic reactions. The antigen is removed from the bacterial cell, and the cellular debris is discarded. The agglutinating antibody titer, as measured by standard mouse potency tests, has converted to a positive result in 90 per cent of infants given extracted pertussis antigen, as compared to 85 per cent given whole-cell vaccine.⁴ Large scale clinical trials have not as yet been done. Wehl noted only two patients developing pertussis during an epidemic in which 1,248 patients were exposed two years after receiving extracted pertussis antigen.⁵

In a clinical study, Wehl, Riley and Lapin compared D.P.T. containing extracted pertussis antigen with one containing whole-cell antigen with respect to the incidence and severity of local and systemic reactions. Febrile reactions, as determined by rectal temperature measurements, occurred in 11 per cent of patients who had received the refined vaccine, as opposed to 51 per cent of those who had been given the whole-cell vaccine.⁴ Local reactions were also milder with the newer vaccine.

PURPOSE OF THE DES MOINES STUDY

Extracted pertussis antigen has been described above as a purer and slightly more potent vaccine, with considerably fewer reactions than the whole-cell vaccine to which it was compared. The moderate decrease in reactions would be of considerable advantage to us in advocating the infant-immunization program to parents during well-child conferences.

The purpose of our study was to compare the extracted pertussis antigen with the whole-cell vaccine we are currently using, in an actual practice situation, as regards the frequency and severity of local and systemic reactions.

METHOD

The study population consisted of 370 infants and children two months to five years of age, who attended 20 well-child conferences scattered throughout Polk County, Iowa. All children requiring D.P.T., whether the initial series or boosters, were included in the study.

The entire investigation was conducted by the double blind method. Neither clinic officials nor parents knew which vaccine had been given. The vaccine vials were labelled with the designation "D.P.T." followed by different three-digit code numbers. The vaccines used were D.P.T. with extracted pertussis antigen,* and two whole-cell antigen D.P.T. combinations.** The compositions of these vaccines are shown in Table 2. Each vial was shaken thoroughly just prior to use, in order to assure an even distribution of the material. After the proper amount had been withdrawn from the

vial, a fresh needle was employed for the deep intramuscular injection. All subsequent injections were made at separate sites.

TABLE 2^{5, 6, 7}
VACCINE COMPOSITIONS
(per total immunizing dose)

	D.P.T. Extracted	D.P.T. Whole-Cell	D.P.T. Whole-Cell
Diphtheria Toxoid (Lf. units) 50		19.9	30
Tetanus Toxoid (Lf. units) . . . 15		15	16
Pertussis Content			
(N.I.H. units) 12		12	12
Whole Bacteria Cells No		Yes	Yes
Extracted Antigen Yes		No	No
Potassium Alum (mg.) 10.6		7.5	15
Thimerosal 1:10,000 Yes		Yes	Yes
(Preservative)			
Bloodless Culture Media Yes		Yes	Yes

The follow-up was conducted by one of the authors, as well as by several public health nurses. Each recorder got in touch with the parents by phone or home visit as soon as possible after a 72-hour waiting period. In a few cases, the parents couldn't be reached for a week or two after the injection was given. In each case, a uniform data card was used, listing the reactions to D.P.T. as shown in Table 1. The parents were allowed to describe any reaction before the check list was read to them.

RESULTS

Local, systemic and allergic reactions were observed. None of these were severe or required professional help in management. The amount of fever in most cases was not measured by thermometer. No febrile convulsions occurred. Central nervous system complications are extremely rare and were not seen in this study. Vaccine containing extracted pertussis antigen produced significantly fewer reactions (Table 3) of all types (30.7 per cent) than did the whole-cell vaccines (43.6 per cent). Since there were no significant differences between the numbers and types of reactions

TABLE 3
REACTIONS OF ALL TYPES

	Injections	Reactions	Per Cent
D.P.T.—Extracted	150	46	30.7
D.P.T.—Whole-Cell	220	96	43.6

produced by the two whole-cell vaccines, their results were combined in the tables for comparison with those produced by the new vaccine.

* Tri-Solgen, Eli Lilly & Company.
** Infagen, Pitman-Moore Company, and D.P.T., The National Drug Company.

The local reactions reported were those associated with inflammation and nodule formation at the site of the injection (Tables 4 and 5). Extracted pertussis antigen vaccine showed a significantly lower rate (16 per cent) than did whole-cell vaccines (28.6 per cent). With the new vaccine, swelling, redness and tenderness were reported in significantly fewer cases. Differences in pain and in nodules were not significant. There was no observation or follow-up of the nodules to determine whether draining cysts (sterile abscesses) developed.

TABLE 4
LOCAL REACTIONS

Injections Reactions Per Cent			
D.P.T.—Extracted	150	24	16.0
D.P.T.—Whole-Cell	220	63	28.6

TABLE 5
TYPES OF LOCAL REACTIONS
(Per Cent Reporting)

	Swelling	Red- ness	Tender- ness	Pain	Nodule
D.P.T.—Extracted	4.7	5.3	8.0	7.3	1.3
D.P.T.—Whole-Cell	14.6	16.7	19.7	10.0	1.3

No significant difference between the vaccines was noted with respect to systemic or allergic reactions (Tables 6, 7, 8). Our study differs from Wehl's⁴ in that no significant reductions were noted in fever or other systemic reactions. The allergic manifestations consisted of rash in four instances and rhinitis in three. It is possible that

TABLE 6
SYSTEMIC REACTION

Injections Reactions Per Cent			
D.P.T.—Extracted	150	37	24.7
D.P.T.—Whole-Cell	220	68	30.9

TABLE 7
TYPES OF SYSTEMIC REACTIONS
(Per Cent Reporting)

	Irrita- bility	Ano- rexia	Vom- iting	Fever	Leth- argy
D.P.T.—Extracted	17.3	2.6	1.3	12.6	4.0
D.P.T.—Whole-Cell	19.0	3.1	1.8	15.9	8.6

some of the rashes were not vaccine-related. This also may be true of the rhinitis cases, for three additional patients were reported to have developed incidental colds. Two patients had bruises at the injection site. Four noted sore legs. One developed diarrhea, probably not related to the injection.

TABLE 8
ALLERGIC REACTIONS

Injections Reactions Per Cent			
D.P.T.—Extracted	150	3	2
D.P.T.—Whole-Cell	220	4	1.8

SUMMARY

A comparison of extracted pertussis antigen D.P.T. and whole-cell antigen D.P.T. was made in an actual practice situation with regard to the incidence and severity of local and systemic reactions. The study was conducted in a well-child conference setting, using the double-blind method of investigation. A total of 370 injections of the vaccines (extracted pertussis antigen and two whole-cell antigen vaccines) in D.P.T. combinations were given to unselected infants and children from two months to five years of age, along with their other routine immunizations. Each child's parents were interviewed 72 hours after the injection to determine the type and severity of reactions, if any.

Infants and children receiving the extracted pertussis antigen had a significantly lower rate of reactions than did those receiving the whole-cell antigens (30.7 as compared to 43.6 per cent). This difference was attributed primarily to a lower rate of local reactions (16 as compared to 28.6 per cent). Although there was a difference between the incidences of systemic reactions (extracted pertussis antigen 24.7 and whole-cell antigen 30.9 per cent), it was a small one and not statistically significant in this study.

ACKNOWLEDGEMENTS

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Round Ligament Spasm in Pregnancy

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BLAKELY¹ COMMENTED IN 1933, "Abdominal pain in pregnancy is frequent and has not thoroughly been studied," and in 1942 Browne² stated, "Fully 80 per cent of women suffer from abdominal pain of greater or lesser degree during pregnancy, though its origin is often obscure or impossible to determine with certainty." A review of the literature reveals that Montgomery,³ Lane-Roberts,⁴ Gardner,⁵ Fahmy⁶ and Glassman⁷ each made reference to the high incidence of abdominal pain during pregnancy which remains of undetermined origin.

All the above writers mentioned stretch of the round ligament as a source of lower-abdominal pain during pregnancy, although Glassman was the first to ascribe such pain to spasm, as opposed to mere stretch of the round ligaments. This paper will restrict consideration to the lower-quadrant pain during pregnancy which is believed due, specifically, to spasm of the round ligaments. This is thought to be a clinical and diagnostic entity, but no previous writing has detailed the mechanism and clinical picture.

Too often is lower quadrant pain during pregnancy ascribed to "squeezed" ovary, "stretch" or "pressure" pains. Such diagnostic epithets are not worthy of further consideration and certainly should not be perpetuated.

The round ligament develops from the caudal portion of the mesonephric fold that forms the gubernaculum ovarii. The gubernaculum extends from the ovary above into the inguinal canal below, with ultimate attachment to the subcuticular connective tissue of the labium major. During its passage, an attachment is acquired to the uterine cornu on the same side. Thus, the suspensory ligament of the ovary (utero-ovarian ligament) is the cephalic end, and the round ligament is the caudal end of the original gubernaculum.

HISTOLOGY AND ANATOMY

The round ligament is a band of smooth muscle fibers and connective tissue continuing from the

uterus. This band also contains lymphatics, blood vessels and nerve. It has attachment to the uterine cornu, below and anterior to the fallopian tube passes forward, laterally and upward, across the lower abdomen, raising a fold in the peritoneum of the anterior leaf of the broad ligament. It penetrates the abdominal wall through the internal inguinal ring, and there is then a hairpin bend medially down the inguinal canal to end in the labium major.

Glassman stated, "Very little investigation of the physiology of the round ligament has been done," and as far as can be determined he was correct. The round ligaments provide some support to the uterus, though this is probably minimal. Their smooth muscle components hypertrophy some five times during pregnancy, and elongate as the result of hypertrophy and stretch. With retroflexion-version of the uterus, they are anatomically stretched.

MECHANISM OF SPASM

As indicated previously, most writers attribute much of the lower-quadrant pain that occurs during pregnancy to stretch of the round ligaments. They must be incorrect, else all pregnant women and all women with retroflexion-version would have lower-quadrant pain constantly, and such is not the case.

Blakely noted that sudden body movements sometimes cause painful local cramps in round ligaments, and that the pain is worsened when the patient lies on the opposite side. Browne, with a converse comment, made note of the fact that relief from such pain is often obtained by lying on the painful side. Glassman added further information in stating that pain occurs when the woman arises from the sitting position, when she turns while in bed or when she coughs, and he said that according to one patient, it occurred before and after urination. Thus it seems that pain results when one or both round ligaments are subjected to a sudden stretch or lengthening, and that when this stretch or lengthening goes beyond a critical point, it results in spasm.

If one analyzes the clinical observations, he finds that the common factor causing pain of round-ligament origin is a movement which necessitates

sudden contraction of the anterior abdominal-wall musculature, one which results in a sudden displacement of the uterine corpus to either side or posteriorly.

The previously named writers place the highest incidence of lower-quadrant pain variously at from six to 30 weeks' gestation and say that it is more common in multiparas and on the right side. At from six to 30 weeks' gestation in multiparas, the uterine corpus is an abdominal organ and has some mobility. The pregnant uterus, furthermore, is rotated slightly to the right because the sigmoid colon passes down on the left posterior aspect. The right round ligament therefore, is always lengthened a bit more than the left, if one considers its length as from the internal inguinal ring to the uterine cornu. Sudden contraction of the anterior abdominal wall will, in effect, sharply displace the uterine corpus posteriorly, resulting in a sudden stretch or lengthening of the round ligaments, and thus causing spasm. Any movement which may cause sudden lateral or posterior displacement of the uterus will have a similar result.

Retroflexion-version occasions a lengthening of the round ligaments whether the uterus is pregnant or non-pregnant, but with the uterus deep in the pelvis and the anterior aspect facing upward, any sudden increase in intra-abdominal pressure is transmitted to the anterior aspect of the uterus, with a consequent sudden further lengthening of the round ligament, and occasionally with spasm and pain. Due to the mass of the uterus, a patient's suddenly sitting down on a solid surface will produce a similar effect and result in pain. The same mechanism applies in the occasional case of utero-vaginal prolapse, when there is a sudden increase in intra-abdominal pressure, with descent of the uterus and resulting round-ligament stretch, spasm and pain.

CLINICAL PICTURE

With the preceding information, one can develop the clinical picture of round-ligament spasm. The picture is that of a woman, usually six to 30 weeks pregnant, who presents with a history of intermittent, moderately severe pain in one or the other lower quadrant. The pain is always of sudden onset and crampy, and it frequently causes the patient to double over. If there be radiation, it is to the mid-inguinal region and down toward the symphysis. The duration of the initial cramp will have been two to three minutes, with a persistence of soreness or aching for periods of time varying from two or three hours to two days. There is no vomiting, and rarely is nausea present.

Close questioning may be required to determine what precipitated the initial pain. Usually, one finds that the immediate precipitating factor was getting up from a deep chair, turning over in bed, a cough, a sneeze, or a sudden change in direction or speed of walking. Ofttimes one is told, "The pain came on when I was sitting in a chair," or "It awakened me from sleep." In such circumstances it is fairly obvious that the patient has

neglected to mention that a sudden movement or roll-over in bed was involved, or that she has failed to recognize the cause-and-effect relationship. A request for observation of subsequent attacks will usually reveal that a sudden movement, with an increase of anterior abdominal-wall tension, immediately precedes the pain.

Examination reveals the temperature, pulse and respiration to be normal. There is tenderness over the internal ring in most cases, and if the pregnancy is beyond 12 to 14 weeks, the round ligament is usually palpable as a thick cord at its cornual insertion. Invariably, pressure at the uterine cornu with displacement to the opposite side will duplicate the pain of which complaint has been made. If the pain is present at time of examination, the spastic round ligament is palpable, and posturing the patient on the affected side affords relief.

In the non-pregnant with similar history, examination reveals a uterus in retroflexion-version or a degree of utero-vaginal prolapse. Displacement to the opposite side in the case of retroflexion-version, or traction on the cervix and an increase in downward displacement in the case of prolapse, will duplicate the pain. A pessary to correct the retrodisplacement or prolapse will prevent recurrence.

The absence of other physical signs and the normalcy of laboratory findings will rule out an infective process as the basis for the pain.

TREATMENT

Once diagnosis has been established, an explanation of the mechanism and advice about avoiding the movements which precipitate pain are usually all that is required. If active treatment is desired, one of the several available antispasmodics may be used on a b.i.d. or t.i.d. basis.

SUMMARY

Spasm of the round ligaments is a common cause of lower-quadrant pain during pregnancy. It occurs more commonly between six and 30 weeks, and invariably follows a movement or activity that necessitates contraction of the anterior abdominal-wall musculature.

The mechanism has been indicated, and the clinical picture detailed.

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Hearing-Screening Procedures In the Public Schools

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MUCH HAS BEEN WRITTEN in educational literature during the last 10 years concerning research analysis of hearing-screening procedures. These analyses used comparatively small populations of school children, usually just large enough to be statistically valid, and nearly all of this research centered upon the screening method—i.e., the number of hearing handicapped children that are likely to be discovered; the number of hearing handicapped children that probably will remain undiscovered; and the number of normal children that will be falsely suspected of having hearing difficulties on the basis of the various methods that were employed. This type of research has provided hearing clinicians in the public schools with data on the preferability of the methods that have been analyzed.

Unfortunately, these studies were performed under circumstances that approached the ideal—circumstances that hearing clinicians seldom encounter. In actual practice, one can expect the results to be affected by the pressures of screening schedules, by variations among the populations to be served, by the facilities available for the screening procedures, by the extent of cooperation obtainable from local school administrators, by the size of professionally trained screening staffs, and by the time available for the performance of screening services. It matters little what the degree of validity a screening method is said to have, if it can't be used efficiently in a given situation.

Because it is important to emphasize the concept of *applicability with reference to need*, what follows in this paper is prefaced with an excerpt from the text entitled *AUDIOLOGY* by Hayes A. Newby¹:

"In recent years, the public schools have been assuming an increased responsibility for discovering cases of hearing impairment in school children. Hearing-conservation programs are becoming as much a part of school health examinations as measurements of height and weight and tests of

visual acuity. In California, for example, the legislature has made it mandatory for all school districts to test the hearing of all their pupils. It was not specified how frequently the hearing of each pupil should be tested. Ideally, every pupil should be tested every year, but few districts can afford the personnel and equipment required to conduct yearly examinations of all pupils. The usual practice, therefore, is to conduct routine tests of every child every third year. For instance, tests may be scheduled for the first, fourth, seventh, and tenth grades each year. In addition, usually provision is made for conducting tests on any child referred by individual teachers regardless of which grade he is in. Children transferring into the district are also tested at the time of transfer.

"Larger school districts operate their own hearing-conservation programs. Smaller schools may contract for hearing testing services through the county superintendent's office. Some hearing-conservation programs have audiometrists whose sole responsibility is to conduct hearing tests throughout the year. Other programs make use of school nurses, who of course have other responsibilities than the testing of hearing. There is a trend today for larger school districts to employ an audiologist, whose responsibility it is to supervise the hearing-conservation program, including the medical and educational follow-up of all children discovered to have impaired hearing.

"The purposes of a school hearing-conservation program are to reduce to the absolute minimum the number of children with permanently impaired hearing, and to provide for the special educational needs of children whose hearing cannot be restored to normal limits through medical or surgical treatment. Since discovery of children with hearing losses is prerequisite to providing for their needs, the testing program is at the heart of hearing conservation. The success of a hearing-conservation program can be measured by the statistics developed in yearly testing. It is usually true that, in the first two or three years of a hearing-conservation program, testing may lead to the classification of as many as 10 per cent. In any school system, the greatest number of medically significant hearing losses will be discovered in the primary grades for the simple reason that very young children have a higher incidence of upper respiratory infections and of tonsil and ad-

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enoid problems. Because these conditions usually respond to proper medical treatment, it is important that they be discovered as soon as they become evident. In its early years, therefore, a hearing-conservation program should concentrate on the primary grades. The discovery and treatment of conditions producing hearing loss in the primary grades will have the result of reducing the number of hearing losses in the higher elementary grades and in junior and senior high school."

Hearing testing of school children may be divided into two types. The first, termed "screening," is a survey of large (ideally total) school populations each year. The purpose of the screening evaluation is to distinguish those children who have hearing within normal limits of acuity from those whose hearing acuity is not within normal limits. The latter group are then referred for more complete hearing evaluations.

The second type of hearing evaluation is at times referred to as an "individual pure-tone threshold test," a "refined hearing test," or a "recheck." This test is given to children who, after screening, have been selected for a more complete evaluation, to those who have been referred by a teacher, nurse, or physician because of a suspected hearing loss, and to those with histories of previous hearing loss.

Because relatively few children are tested by this second type of hearing test, and because staff, equipment, procedures, and time allotted to perform this type of hearing evaluation are usually adequate, this paper concerns itself only with the screening type of hearing evaluation and its applicability in the public school situation.

As has been stated before, the goal of a good hearing screening program is to discover *all* school children who have any degree of hearing loss, so that they may be referred for more complete hearing evaluations, and subsequently for medical and special education attention, if warranted.

Given a total school population in need of annual hearing evaluation, and given limited staff, equipment and time for the performance of this service, what screening procedure or procedures can best be utilized? The type of screening should be selected on the basis of two *equally* important factors—*validity* and *applicability*.

PHONOGRAPH TECHNIC

Let us apply these criteria to the types of screening procedures that were used in the past and to those now in use. Among the first attempts at an objective evaluation of hearing acuity for large populations of school children was the phonograph group-screening method. It screened 30 children at one time. A recording of either a man's or a woman's voice calling off lists of two-digit numbers at a progressively descending level of loudness was used to determine the hearing acuity of

each child screened. The children screened would record the numbers they heard on a hearing-test form. The tester would then analyze these forms to determine the level of loudness at which each child failed to respond correctly to the screening stimuli.

First, let us examine this method of screening, with respect to validity. For a screening test to be valid, it must select those children whose hearing is not within normal limits of acuity from those whose hearing acuity is within normal limits. The phonograph group method at times failed to do this for a number of reasons. Some are as follows: (1) After the recordings had been played a number of times, surface noise from worn phonograph records masked out the stimuli presented as they approached the threshold of normal acuity. (2) If the two-digit numbers presented to the children were spoken by a male voice, which is characteristically a half to a full octave lower in pitch than the female voice, there was a danger of allowing a child with a discrete high-tone hearing loss to pass the evaluation. (3) If the two-digit numbers presented to the children were spoken by a female voice, the danger existed that surface noise would more easily mask out the auditory stimuli and excessively screen out children whose hearing was within normal limits. (4) Children with average or better intelligence could quickly identify the numbers presented (with the exception of 5 and 9) by their vowel components. Thus, the danger existed that a child with a high-tone hearing loss would be identified by this type of hearing evaluation as having normal hearing.

What about the applicability of this screening method in the public school situation? (1) The equipment was bulky and heavy, making transportation from school to school difficult. At least a half hour was needed to set it up for testing, and very little less time to repack it. (2) A room in which to screen the hearing of 30 children at one time had of necessity to be a large one. (3) If proper screening levels were to be maintained, the recordings had to be replaced as soon as the surface noise began significantly to affect the validity. This appreciably increased the cost of this type of screening method. (4) Once the phonograph recording was started in the screening situation, it could not easily be stopped and restarted in case noises or other distractions from within or from outside interfered temporarily with the test. (5) The response of the child being screened was by paper and pencil and thus children in grades below the third grade could not validly be screened because of their lesser dexterity and familiarity with such implements. It is very likely that the weaknesses of validity and applicability just mentioned contributed to the general abandonment of this method of screening the hearing of children in the public schools.

PURE-TONE AUDIOMETER INDIVIDUAL SWEEP-CHECK TECHNICS

Another method of performing hearing screening came into use with the general acceptance of the pure-tone audiometer. This is an electrical apparatus which is capable of producing the major sound frequencies that comprise the audible speech range, in standardized units of calibrated loudness. It is with this apparatus that an individual pure-tone threshold hearing test can be administered. With an alteration in the procedure of the test, the audiometer can also be used to screen the hearing ability of an individual. This screening procedure is at times referred to as an "individual sweep screening evaluation," and at times it is referred to simply as a "sweep-check."

Much of what we read in the literature points to this individual method as the most valid type of hearing-screening evaluation that is possible. However, because of the time it takes to administer it at the level of validity of which it is capable, considerably fewer children can be screened in a given time than by a group-screening method.^{1, 2, 3} From my personal experience with this method and from my observation of its administration by others, I very much agree with Dr. Newby and other leading authorities in the field that it is impossible validly to screen the hearing ability in both of a child's ears in less than two minutes.¹ Therefore, if one is to use an individual sweep screening evaluation properly, he can expect to test no more than 30 children per uninterrupted hour.

Minimally-trained hearing conservationists, using this sweep-check method in a public school situation, have the tendency—an ill-advised one—to shorten the administration time so as to test a larger number of children within the limited time at their disposal. Within the past years, while conducting hearing-screening workshops throughout the state, I have observed many of them modifying the individual sweep-check screening procedure in almost as many different ways as there were people performing the test. By so doing, as was demonstrated upon re-test, they seriously affected the validity of the findings.

Following are some of the most common ways in which I saw the findings of the individual sweep screening evaluation invalidated: (1) The principal error seemed to be the placing of undue emphasis upon increasing the numbers of children screened with this method. The personnel apparently held the erroneous belief that the hearing of both of a child's ears could be validly evaluated in no more than 30 seconds, on the average.

(2) The child was asked to hand-hold one audiometer earphone to the ear under evaluation, while the other ear remained exposed to ambient room noise. This procedure seems to ignore the fact that factory calibration levels established for

that earphone have been determined by measurement of electrical input to the earphone with the earphone coupled to a standard 9-A coupler.⁴ (These calibration standards are presently under study for possible revision.) Thus, if an audiometer has been calibrated in five-decibel steps, allowing for an actual interval of 3.5 to 6.5 decibels, and if screening is performed at 15 decibels, an ambient room noise level of 25 to 30 decibels impinging upon the patent ear can mask out frequencies presented at the screening level. This usually results in screening out many children whose hearing acuity lies within normal limits, because rooms used for public school screening in Iowa rarely have less than a 50 to a 55 decibel ambient noise level, as measured in a recent informal survey with a sound survey meter.*

(3) At times, children were allowed to hand-hold both of the earphones to the ear. However, whether one or two earphones were used, by allowing children to hand-hold the earphones, the standardized pressure (400 grams)⁴ used by the manufacturer in calibrating the coupling devices was not simulated. At times, this introduced the effect of standing waves in the higher frequencies (when 8,000 cycles per second was used), and a muscle tremor due to fatigue at times introduced a masking effect, especially with the younger children. The leading audiometer manufacturers recommend the use of the double headband which accompanies the audiometer earphones, and they direct that it be positioned properly on the head of the child under evaluation in order to approximate the correct pressure of earphone to ear.

(4) At times, inappropriate sound frequencies were selected to evaluate the medical aspects of hearing loss. Some screening procedures included 8,000 cycles per second, and children with normal hearing were unnecessarily screened out, since in children in the elementary grade age group⁵ standing waves introduced at that frequency were compounded by the resonance factors of the varying shapes of external ear canals.⁷

(5) At times, 3,000 and 4,000 cycles per second were omitted from the screening frequencies selected, thus preventing the discovery of children who very definitely may have had hearing losses of medical significance. With unselected populations of at least 150 children evenly distributed throughout the elementary grade range, it was repeatedly demonstrated that if 3,000 and 6,000 cycles per second had been omitted, from 20 to 25 per cent of the number of children screened out would not have been discovered because of the discrete hearing losses that existed at one or both of these frequencies.

Lest I give the impression that the individual sweep-check method of screening is not a proper

* Equipment used in the survey: Sound Survey Meter, type 155-A, manufactured by General Radio Company, Cambridge, Massachusetts.

hearing evaluation for use with public school children, let me emphasize that the individual sweep-check should be given first consideration wherever the total school population is not too large and wherever the staff, equipment and screening time are sufficient to permit an annual evaluation for each child in need of one. However, when computing school population need and staff, equipment and screening time available, one should remember that more than 30 children per hour cannot be evaluated by one tester without a serious loss of test validity.

GROUP PURE-TONE TECHNICS

Because of the limitations of applicability of the individual sweep-check with respect to the large numbers of children in need of an annual hearing evaluation and the small staffs available to perform this service, it was recognized early that there was a need for a valid group-screening technic that could be extended to total populations of school children by existing staffs. In answer to this need, Dr. Phillip W. Johnston, head of the Child Growth and Development Section of the Division of Maternal and Child Health Services of the Massachusetts Department of Public Health, developed the Massachusetts Pure-Tone Group Screening evaluation method.

This method utilized 40 earphones activated by an audiometer. Three puretone speech frequencies were presented to the children being evaluated. Following instructions from the evaluator, the children were directed to indicate on a hearing-test form whether or not they heard a puretone presented or not presented by the evaluator when given the signal to do so. After evaluating both ears of the children being screened, the evaluator would then score each test form by counting the negative answers given and comparing it to the pattern of signals he had presented.

With respect to validity, the one major drawback of this method of screening is that it is based upon the assumption that all children with medically significant hearing losses, as well as educationally-handicapping hearing losses, can be discovered by discrete evaluation at three frequencies. The validities of screening methods based upon a two- or three-frequency presentation have received much critical attention in the professional literature in recent years.⁶ Where such methods have been advocated, it is my impression that undue emphasis has been placed upon applicability, in terms of numbers of children who can be "processed," at the sacrifice of validity, in terms of allowing children with medically-significant hearing losses to "screen through."

There are many drawbacks to the Massachusetts Group Pure-Tone Screening method: (1) The equipment is heavy and not easy to transport from school to school, especially by female personnel.

(2) A large room is needed if 40 children are to be screened at one time. Such facilities are not easily available, because of the present shortage of classroom space. (3) To keep administration time within reasonable limits, a helper has to be utilized for such purposes as helping adjust earphones to ears by proper headband placement, correcting earphone placement to the ear being evaluated, sharpening pencil points that children have broken, etc. (4) Roughly 20 per cent of children screened by this method are initially "screened-out," and half of these are usually screened-out for reasons other than lack of hearing acuity. As a result, the children initially screened-out have to be regrouped and rescreened either by the Massachusetts method or by another procedure before the generally accepted 7 to 10 per cent of the population has been identified by screening as being in need of a pure-tone threshold test. (5) Because the response of the children being screened is by paper and pencil on a test form, the test is inapplicable to children in grades below third.

The innovator, Dr. Johnston, recognized these limitations of the Massachusetts Group Pure-Tone Screening method, and in 1951 he reported a new group pure-tone screening method in the *JOURNAL OF SPEECH AND HEARING DISORDERS* of the American Speech and Hearing Association. This method, known variously as the Johnston Group Pure-Tone Screening Test and as the New Group Pure-Tone Test, employs 10 earphones activated by an audiometer. The earphones are equipped with Insuline No. 195 rubber cushions, and are hand-held to the ear under evaluation. This type of cushion reduces the masking effect of the muscle tremor that at times may be caused by fatigue. The earphones and audiometer group circuitry calibration standards were determined by a "jury" method to be comparable to the earphones for use with a double head-band receiver.

Following the evaluator's instructions, children are allowed to respond to the puretones presented by raising their hands when they hear a signal in their earphones, and by lowering their hands when the signal is interrupted. There are a number of ways to eliminate chances of faked responses.

When administered by a trained hearing clinician, the Johnston Group Pure-Tone Screening method closely approximates the level of validity of which the individual sweep-check screening method is capable when properly administered. (1) The Johnston method screens the hearing of children for all major frequencies of the speech range. (2) Its component parts—an audiometer and one tray of ten receivers—comprise a kit which is light in weight, compact and easily transported. (3) On the average it takes five or six minutes to set-up and field-check this equipment completely, and three to four minutes to repack it. The shorter set-up and take-down times permit

the screening of greater numbers of children. (4) The shorter period of time per child makes possible the annual screening of a greater portion of the total school population. (5) Because of the hand-raising type of response utilized by the Johnston method, and the simple-to-comprehend instructions, children in the first and second grades, as well as those in the grades above, can be validly screened.

In addition to those screening methods already discussed, a few others have recently been mentioned in the literature. However, one can evaluate the use that can be made of these in the public school situation by carefully considering the factors of validity and applicability just discussed.

SOME BASIC CONCEPTS

In closing, I should like to present some basic concepts concerning hearing-testing in the public schools.

It is erroneous to suppose that just anyone who occasionally has a block of free time can properly administer a hearing-testing program. Merely identifying children with hearing problems serves no useful purpose. One should be trained in and prepared to supply the other services which many of these children will undoubtedly need. Hearing conservation services in the public schools consist of five major programs, of which hearing-testing is just one. The others are prevention, medical follow-up, special education follow-up, and classroom adjustments. In any school organization of a size that permits the hiring of a speech therapist, a school psychologist or a school nurse, a hearing clinician should be considered a necessity for the purpose of extending total hearing conservation services to the school population. The importance of this member of the special education team can easily be recognized when one considers that within any given year, conservatively six per cent of the school population will have hearing problems of varying degrees of medical and educational significance.

When selecting a screening procedure for use in a school district, do not sacrifice validity to applicability. Testing technics capable of "screening" all the children every year do no particular good if they miss many children with hearing problems. Even worse than missing these children is the danger that by such a procedure their hearing will be misidentified as normal. Thus the child's teacher, school nurse, or parent is led mistakenly to suppose that nothing can be amiss.

On the other hand, a screening procedure should not be selected for its validity alone, regardless of its applicability. It is a disservice to a school population to offer hearing tests once every three years, when through the use of a valid procedure of more applicability, the test interval might be significantly reduced.

School districts that claim to test the hearing of

all children every third year through a program of testing third, sixth and ninth graders lose sight of the fact that under such a program first and second graders are never routinely screened. It is at these grade levels that the incidence of hearing loss is particularly high, and therefore the extension of hearing evaluation services is of extreme importance. Especially now that improved group pure-tone screening methods as well as the individual sweep-check method can validly test the hearing of first and second graders, there is every reason to provide this service for *all* children enrolling in the first grade, as well as in the third, sixth and ninth grades, if it is not possible to evaluate the hearing of all school children annually.

In keeping with the recommendations of the 1951 report of the Council on Physical Medicine and Rehabilitation of the American Medical Association, 8,000 cycles per second should *not* be selected as a screening frequency because of the large numbers of normal-hearing children that will be screened out at this frequency because of standing wave factors which usually occur at frequencies above 6,000 cycles per second.⁵

On the other hand, from personal experience and from informal studies that I have conducted over the years, I should recommend that the following frequencies be selected to help assure a more valid hearing evaluation: 500, 1,000, 2,000, 3,000, 4,000, and 6,000 cycles per second. A seventh frequency, 250 cycles per second, may be included as an indicator frequency, to help the evaluator determine the masking effect which the ambient room noise commonly encountered in public school screening facilities has upon the screening loudness level (15 decibels).

One should not attempt to evaluate the hearing of children where the amount of ambient room noise present cannot be adjusted to allow for the use of a 15-decibel screening level.

When determining criteria for medical referral, do not settle only for a pre-established arbitrary level of audiometrically-measured hearing loss. A very clear danger exists in selecting a certain amount of hearing loss as the only referral criterion. The danger is not, as many believe, in the over-referral to physicians of children not in need of medical attention. No physician would complain of seeing a child in his office, if the child were referred on the basis of an objective test. The danger is that children who have medically significant hearing losses but do not quite come up to the arbitrarily established cut-off level, will *not* be referred for needed medical attention.

I am aware that for administrative reasons some criteria for medical referral must of necessity be established. The American Academy of Otolaryngology and Ophthalmology suggests that a loss of 20 decibels or more in two or more frequencies be selected as a referral criterion. Some programs will, in addition, accept a loss of 30 decibels or

more in a single frequency as being medically significant.

No matter what audiometric criteria are selected, the simple fact is that it is not possible for anyone to determine medical significance of a hearing loss when such a determination is based only upon an audiogram. There are many severe hearing losses that are not medically significant, and many more mild hearing losses that are. Medical significance should be left up to a physician capable of making that determination, and every effort should be made to refer all children who may be in need of such attention. One way of doing this might be to select as medical referral criteria, not only the hearing threshold shown on the audiogram, but also a careful evaluation of the child's past medical history, and a consideration of present physical factors that may possibly contribute to the hearing loss.

Another way of establishing medical referral criteria is to defer the individual pure-tone threshold test to a period of three or four weeks following initial discovery in screening. If at the time of the second evaluation a hearing loss is found to exist, the child may be referred on the basis of a hearing loss that has been observed to exist for at least three or four weeks (depending upon the interval of time between evaluations),

regardless of its severity. The exceptions in this method of referral would be children with evidence of acute or severe pathology. These should be referred as soon as discovered.

It is unfortunate that more people engaged at the grass-roots level of identification audiometry do not see fit to enlighten their colleagues in the research field concerning the very real problems with which they are faced in a public school screening program. Until they do so, the practical application of much of what is reported to them through research may be compared to the bottom half of a double boiler—all steamed up without knowing what's cooking!

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Treatment of the Binghamton Babies

Accidentally, on the morning of March 7, 1962, infants at a hospital in Binghamton, New York, began to receive a formula containing a sodium concentration of 100 mEq./L. The error was discovered and corrected on March 11. By that time, six of the 14 babies who had received the formula were dead. Postmortem examination disclosed in one case that death apparently had been unrelated to salt-poisoning, but in the other cases (infants ranging from four days to eight months of age), the typical effects of salt-poisoning were found—parenchymal dehydration, pneumonitis and multiple brain hemorrhages.

Of the eight remaining patients, six required most attention. One of them was moribund, with a serum sodium of 244 mEq./L.; three were critical, with serum sodiums of 274, 244 and 163 mEq./L.; and two were in fair condition with serum sodiums of 178 and 164 mEq./L.

In the four most serious cases, peritoneal dialysis, using glucose and water, was carried out. The technic was well tolerated, and there was no apparent complication. It removed significant

quantities of sodium, corrected the hypernatremia and resulted in a gratifying relief of hyperirritability. Five dialyses reduced the sodium from 244 to 194 mEq./L. in the moribund infant, but death occurred from bronchopneumonia. Seven dialyses reduced the sodium from 244 to 159 mEq./L. in the second of the treated infants, with recovery. In the third, the sodium was reduced from 185 only to 174 mEq./L., by seven dialyses, but the patient recovered, thereby establishing a record. In the fourth case, one dialysis reduced the sodium from 163 to 140 mEq./L., and the subsequent condition of the baby was satisfactory. The two babies with initial concentrations of 179 and 164 mEq./L. improved following salt restriction and water administration, and did not require dialysis.

All peritoneal dialyses were associated with some water retention, although it did not produce significant edema. This was thought to suggest, however, that the tonicity of the dialysis fluid should closely approximate the tonicity of serum, so as to forestall excessive absorption of water from the peritoneal cavity by the hypertonic serum.

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 15-YEAR-OLD NEGRO BOY was treated in an outpatient clinic for a dog bite on the wrist. The wound was cauterized, and he was given anti-tetanus serum and sent home.

On the afternoon of the following day he became febrile and had frequent, mild chills. Apparently these symptoms did not change appreciably during the remainder of the day. At 3:00 a.m. the next day, the boy's father recognized that the lad was very acutely ill and had difficulty in walking. He brought him back to the hospital.

When admitted to the hospital a half-hour later, the boy was moderately jaundiced. He was semi-comatose with episodes of delirium, and he was having mild tetanic convulsions. His body temperature was 103.5° F., his respiratory rate was 24/minute, and his pulse rate was 120/minute.

The only evidence of significant illness derived from the past history was that the boy had been anemic and had experienced several episodes of icterus; the first had occurred in early childhood. He lived in Central America in an area where malaria was common. The father did not know whether the boy had previously received tetanus anti-serum or other serum injections. Testing for serum sensitivity was claimed to be standard practice in the outpatient clinic where the tetanus anti-serum had recently been given, but the hospital chart contained no record of his having been given a sensitivity test.

The dog that had bitten the child had been a family pet for the previous six months. The dog had first become ill on the day it bit the child. It had been lying in a corner of a room and had refused food. The boy had been bitten while carrying the animal to a veterinary clinic. The veterinarian diagnosed the dog's illness as leptospirosis, on the basis of clinical findings and a microscopic examination of the urine.

The boy was given 400,000 units of penicillin intramuscularly shortly after admission. He died within a half hour after admission.

CLINICAL DISCUSSION

Dr. Hans Zellweger, Pediatrics: Today's case

will be discussed first by Mr. Gary Roghair for the students.

Mr. Gary Roghair, junior ward clerk: In our study of the case, we divided the possibilities into those which were likely and those which were not. I shall first mention the possibilities that we did not think likely. We felt that rabies was doubtful because there was no history that the dog had rabies. Also, if this was the only dog bite incurred, the incubation period was too short. There might be an anaphylactic shock or serum sickness resulting from the boy's anti-tetanus shot, but anaphylactic shock can be expected to occur much more rapidly than this illness did. Moreover, serum sickness, as a rule, is non-fatal. We didn't think he had tetanus because there was no sign of spasm, with increased rigidity, and also because normally the patient is conscious and mentally clear in such cases, and this patient was not. Also, the time development was against it.

Next, I shall discuss those conditions which we thought were likely diagnoses. Fulminating infectious hepatitis was a possibility. In such instances the white blood cell count is increased, and the patient has some bleeding, with hemorrhagic areas along with ascites. In a brief consultation with Dr. Zimmerman beforehand, we had learned that information to support or rule out this disease was not available.

Another possibility was malaria. In malaria one would expect an enlarged spleen, and the blood smear would show parasites. Apparently information about the spleen and the blood smear was not available either. Another point which would be interesting to know would be how long the patient had been away from an area of malaria. If one is away from the area for more than two years, the chances of developing falciparum malaria decreases. Is it known how long he was away from this area?

Dr. George Zimmerman, Pathology: He was in the area.

Mr. Roghair: This, then, is still a possibility.

Since the dog had leptospirosis, the boy may also have developed this condition. The time when he sustained the bite is not especially important,

since he might have been playing with the dog for some time, and might have come in contact with its urine or feces and developed leptospirosis before being bitten. In this case, again, he should have had leukocytosis. Another common finding is conjunctivitis, and again we are not aware that he had this ailment. Apparently he died so rapidly that a white blood cell count was not taken and smears were not taken.

Finally, we felt that crisis from sickle-cell disease was a strong possibility. There was a previous history of jaundice. In this connection, smears showing typical red blood cells would have been helpful. Whether or not he had leukocytosis might have been important, for leukocytes are increased in sickle-cell anemia, but whether or not he had an enlarged spleen is not especially important here, since it is enlarged in only 10 to 20 per cent of the cases.

We therefore suggest the possibilities as fulminating infectious hepatitis, malaria, leptospirosis and sickle-cell anemia crisis. A crisis of sickle-cell anemia could have been brought on by a mild infection sustained from the dog bite.

Dr. Zellweger: Dr. Taylor.

Dr. J. Taylor, Pediatrics: Most striking about this case is the lack of information, and Dr. Zimmerman has said he will provide us with no more data.

I would like to attack the problem from the end, and first, or rather last, the question of leptospirosis arises. There are two types of leptospirosis in dogs that are transmitted to humans. The organism is transmitted in the dogs' urine through a skin abrasion, since it does not pass through intact skin. The more common type, *Leptospira canicola*, has a very low mortality. As a matter of fact, there have been only three deaths in children reported from an infection with the *canicola* species. These deaths have occurred 28 days, 9 days and 14 days after the onset of the illness. The second type, *icterohemorrhagica*, produces the classic Weil's disease. This has an incubation period of nine to 14 days, or an average of 10 days. As a general rule, Weil's disease follows a biphasic course. The first is a septicemic course characterized by fever, chills, headaches and gastrointestinal symptoms. During this phase, conjunctivitis is quite marked. After five to seven days, a lysis of the fever takes place, and then there is a recurrence associated with meningeal, hepatic, and renal symptoms. During the second phase, *leptospira* cannot be found in the body, and it is felt that this phase represents a hypersensitivity reaction. As a general rule, individuals dying of the *icterohemorrhagic* type of leptospirosis do so during the second or third week of their illness.

I do not think this child had leptospirosis. The time interval from the onset of symptoms to death is too short, and the incubation period is too short

if we assume that the dog was well until two days before the child died.

The dog bite raises the question of rabies, but I would agree that it is a quite unlikely explanation, because the normal incubation period is from two to eight weeks, with outside limits of eight days and one year. The bite occurred only 36 hours before this child's demise.

Next we find that tetanus antitoxin was given. It is assumed in the protocol, and we have only that assumption to rely upon, that appropriate skin testing was done. If testing was not done, the hospital where this child received tetanus antitoxin is quite seriously at fault. As has been mentioned, anaphylaxis is the most common and, in fact, the only cause of death due to an antitoxin reaction, and it occurs from seconds to minutes after the injection of the antitoxin. Serum sickness usually occurs between the fifth and fourteenth day. This is manifested by joint swelling, urticaria, and a wide variety of neurologic signs, the most common being brachial-plexus palsy and peripheral neuropathies. It is never fatal. Again the time interval was such that I don't think serum sickness was involved here.

In the reactions to antitoxin injection, however, a more rapid onset of serum sickness has been described which is called an anaphylactoid reaction. This occurs usually between the second and fifth day. The symptoms are very similar to those of serum sickness, but the interval between injection and onset of symptoms is considerably shortened. I shall come back to this a little bit later, for I think this may have played a part in the boy's death.

Now, we move to the chronic history of icterus and anemia. Unequivocally, malaria can cause anemia. This is produced not only by toxic depression of the bone marrow but by a chronic hemolytic process due to the parasitic infiltration of the red cells. Malaria can also produce jaundice. Jaundice occurs usually in the plasmodium falciparum infections, and is characterized by what is described as "black water fever." Here a massive, intravascular hemolysis occurs. The onset is rapid. There is marked hemoglobinuria; there is profound anemia; the fever is quite high; and there is marked jaundice. Eventually shock and death ensue. The patient was not in shock as far as we can determine. His pulse rate of 120 is compatible with a temperature of 103° F. Also it is highly unlikely that repeated episodes of black water fever accounted for the recurrent episodes of jaundice. Malaria can have a chronic course, in addition to producing anemia and jaundice. In the falciparum variety of malaria, spontaneous cure from the disease usually occurs within a year. Of course there is the possibility of repeated falciparum infections, but I think it very unlikely that this patient had had repeated hemolytic episodes due to

this parasite. Death, when it occurs in malaria, is almost invariably due to falciparum infection.

I think the clue to the case under discussion today is the fact that the child had been anemic and had had episodes of icterus since early childhood. When we see a child with anemia and icterus, our first thought is of a hemolytic anemia. It is known that there is a very high incidence of a deficiency of glucose 6-phosphate-dehydrogenase in the Negro population. However, I think it highly unlikely that this child had been reared from early infancy on a diet of lava beans and mothballs. Therefore, I am inclined to throw this out as a possibility, and instead to consider one of the congenital hemolytic anemias. Congenital spherocytosis is extremely rare in Negroes, although there are reports of congenital hemolytic jaundice in some of the Bantu tribes in Africa. Thalassemia is another possibility, but it would be extremely unlikely for a child with thalassemia major to live to 15 years of age without coming to medical attention.

Finally, there is sickle-cell disease, and I feel that this child had that disease. As you know, sickle-cell anemia is a recessively inherited disorder characterized by the presence of large amounts of abnormal S-hemoglobin, a chronic anemia, and intermittent crises which may result in death. S-hemoglobin usually occurs in Negroes, and although cases of sickle-cell anemia have been described in the white population, it is becoming increasingly clear, as more is learned about the hemoglobinopathies, that many of the early reports of sickle-cell disease in white persons were probably cases of a sickle-thalassemia combination. In homozygous sickle-cell anemia, anywhere from 60 to 98 per cent of the hemoglobin is of the S variety, and the remainder is fetal. Usually normal adult hemoglobin is not present.

Sickle-cell anemia has provided the basis for very interesting genetic and anthropologic studies following the first observation by Beek, in 1946, of an increased incidence of the sickle-cell trait—i.e., the heterozygous condition—in areas where malaria was most prominent. *In vivo* studies have indicated that the S-hemoglobin is unsuitable for the growth of the falciparum organism, but not for other types of plasmodium. Since plasmodium falciparum malaria is the leading cause of death from malaria, the loss of the sickle-cell gene by the early death of the homozygote is more than counterbalanced by the resistance of the heterozygote to malarial disease. Although a great deal of controversy still exists about this, there is general agreement that the children who are heterozygous for the sickling gene have a greater chance to live to a reproductive age than do normal children, when both groups are exposed to malaria.

In addition to the presence of S-hemoglobin, the second feature of sickle-cell disease is a chronic anemia. This is attributable to the increased mechanical fragility of the cells containing S-hemo-

globin, and their diminished life span. As a rule, the children with sickle-cell disease have hemoglobins consistently between 7 and 8 grams, and they do surprisingly well between crises.

Sickle-cell anemia is primarily a disease of children. Scott and Jenkins, at Howard University, in Washington, have noted that approximately 50 per cent of all children with sickle-cell disease are diagnosed by two years of age, and that the vast majority—approaching 100 per cent—are diagnosed by 15 years of age. It is very rare to pick up sickle-cell anemia before six months of age, although there are some reports of early diagnosis in the literature. Although death from sickle-cell anemia may occur early in childhood—and this is cited as one of the causes for sudden death in children between six and 24 months of age—usually the person with sickle-cell disease dies in a crisis sometime during the second or third decade of life. It is unusual to see a person with sickle-cell disease in the 30's and quite rare to see one in the 40's.

The third characteristic of sickle-cell disease consists of recurrent crises. Several types of crises have been recognized, the most common being the thrombotic or so-called "clinical" crisis. This is characterized by generalized thrombus formation, accompanied by fever, pain and very little change in the hemoglobin or reticulocyte count or in the bilirubin. The pathogenesis of crisis is related to the fact that the sickle-cell assumes a crescent shape in atmospheres which are deprived of oxygen. As a result of sickling, the cells which are inflexible and insoluble enmesh with one another, resulting in increased viscosity and capillary stasis. As the result of the stasis, there is more anoxemia and more sickling, and eventually a thrombus is formed, with subsequent infarction.

The factors precipitating a crisis are many, and the majority of crises are produced by unidentifiable factors. Unequivocally, anoxic situations will produce a sickle-cell crisis, not only in the homozygote sickler but also in the sickle trait. This has been shown by the onset of mild crises in people with the sickle trait during air travel. A lowered pH will produce a sickle crisis. This has been induced experimentally by giving ammonium chloride. Fever will produce a sickle crisis, possibly in some way related to a mild acidosis. It has been estimated that anywhere from 50 to 70 per cent of all children who are admitted to a hospital with crises have some evidence of infection. Anemia predisposes to peripheral anoxemia, and this in itself will produce a crisis. However, nature has taken care of the child with sickle-cell anemia by providing him a high cardiac output, thereby reducing arteriovenous difference and preventing massive intravascular sickling.

The symptoms of the thrombotic crisis are legion. All diseases have been confused at one time or another with the sickle-cell crisis. For example: rheumatic fever with or without carditis

has been mistaken for it, although interestingly only four cases have been reported in which it was proved that sickle-cell disease and rheumatic fever coexisted. Infectious hepatitis can be simulated by sickle-cell crisis, as can meningitis, poliomyelitis, nephritis, acute surgical abdomen, osteomyelitis, leukemia, bacterial endocarditis, etc.

A second and much rarer type of crisis is the so-called "aplastic" one, where the symptoms of pain are accompanied by falls in the hemoglobin and in the reticulocyte count. Here the bone marrow becomes hypoplastic, while the continuing destruction of the red cells persists. The child becomes anemic in addition to having symptoms of thrombosis throughout his body.

A third type of crisis, known as the hemolytic, has been described. In this situation there is actually an increase in the destruction of the sickle-cells, accompanied by a fall in hemoglobin and an increased bilirubin. The existence of the hemolytic type has been questioned by many observers.

A few words about therapy of the crisis. The majority of crises that we see in children with sickle-cell anemia are of the thrombotic type. Here therapy is purely symptomatic, consisting of bed-rest, analgesics and, most important of all, adequate hydration. Giving plasma, fluids or even Dextran, expands the blood volume, which in turn helps to expedite mobilization of the trapped cells. If an infection is present, appropriate antibiotics should be given. If the child is critically ill, oxygen should be given for short periods of time. However, it has been shown that the use of oxygen in sickle-cell anemia will only cause depression of the bone marrow, and this aggravates the anemia. Alkalis such as sodium bicarbonate have been used to combat local acidosis; Prescoline has been used to give capillary vasodilation; and finally, of course, ACTH and cortisone have been used without much justification.

In the aplastic crisis, blood transfusions are necessary. These increase the oxygen capacity of the blood and reduce the number of sickle-cells both by dilution and by depression of hematopoiesis. In the pure thrombotic crisis, however, blood transfusions are usually unnecessary because there is no drop in the hemoglobin. Obviously in aplastic crises, if there is evidence of congestive heart failure, digitalis is indicated.

Death from sickle-cell disease occurs from one of four causes. First is congestive heart failure due to the chronic anemia and cardiomegaly. Second is an overwhelming infection. There is a great deal about the mechanisms of immunity in these children that we do not understand. Why they do not get rheumatic fever is quite a puzzle. Why they are more likely to get infections is also a puzzle. Third is an abdominal crisis. Here shock occurs because of a massive pooling of sickle-cells and plasma in the abdominal organs. The patient presents as an abdominal surgical emergency with moderate to

profound shock. The diagnosis is often difficult to make because children with sickle-cell anemia have a tendency to develop cholelithiasis, and also in the crisis they very often show high white blood cell counts, in the range of 30,000 or above. The final cause of death in sickle-cell anemia is congestion and thrombosis of cerebral vessels, especially the cortical branches of the middle cerebral arteries. These massive thromboses cause brain infarction and a wide variety of neurologic symptoms. Thrombosis of the dural sinuses has been reported, and there are some reports of subarachnoid hemorrhage.

To return to the case in point, I feel the child under discussion had sickle-cell anemia, and that he died of a sickle-cell crisis with central nervous system thromboses. What precipitated this crisis is difficult to say. It may have been an anaphylactoid reaction to the tetanus antitoxin. It may have been an infection in the dog bite area, or it even may be that the trauma of the dog bite itself precipitated it.

Dr. Zellweger: Are there any questions for Dr. Taylor?

Mr. Roghair: Could heparin be used to get the patient over the crisis—to break up the clots?

Dr. Taylor: One might conceivably use it, but the problem is that with the thrombosis and infarction you have an associated hemorrhage, so heparin is generally not used in cases of sickle-cell crisis.

Dr. Zimmerman: I might add, in respect to the last question, that it has not been settled whether these are real thrombi—in other words fibrin thrombi—or whether they represent just occlusions caused by sickled-cells. If the latter were the case, I wouldn't expect heparin to accomplish anything.

With respect to the paucity of data in this case, I might say that originally this was a medico-legal case, and the only information withheld was the final diagnosis that had been made clinically. A clinical diagnosis of sickle-cell disease had been made some years previously. The police investigation incident to the death of this boy permitted us to rule out other considerations such as trauma, poisoning and so on. Having done that, we proceeded along essentially the same lines that were followed by the previous speakers. Sensitization to anti-serum was one of the considerations. Malaria was a consideration. Leptospirosis was a consideration. Sickle-cell crisis was the fourth possibility that we felt would be worthwhile investigating seriously. The question of anti-serum sensitivity, I think has been covered adequately.

Malaria would be very unusual in causing a sudden and acute course. There is no record of malaria smears. I should guess they probably were done, since in that area malaria smears are practically routine. The course was very atypical. The autopsy findings were not that of malaria.

Leptospirosis was mentioned as a possibility. The incubation time was wrong, unless we want to assume that the boy and the dog both contracted the disease simultaneously at an earlier date. It would certainly be unlikely that he should have contracted it from the dog bite. Imprints of tissues of the spleen, kidneys, liver and lungs and stains for spirochetes were all negative. The guinea pig inoculation for leptospira was negative. However, we have to interpret those findings in light of the fact that the tissues were not received until some 24 hours after death, so the guinea pig inoculations may have been negative simply because the time interval had been too great. However, we have one other important piece of evidence with respect to leptospirosis. In an acute course like this, there should have been no problem in identifying the lesions of leptospirosis in heart muscle, kidneys and so on, and there were none. So with the combination of history, the negative smears, negative guinea pig inoculations and negative histologic findings, I think we can exclude leptospirosis.

Sickle-cell crisis, which was decided upon as the cause of death in this case, is characterized by fever, abdominal pain, pain in the extremities and/or in the muscles and joints, prostration, sometimes shock and sometimes death. I would disagree slightly with Dr. Taylor in his interpretation of the pathogenesis of the crisis. He said that crisis is due to stasis of cells due to sickling, but Diggs, from Memphis, studied 156 patients during 747 crises and was unable to demonstrate any consistent increase in the per cent of sickle-cells at the time of crisis, as compared to the per cent of sickle-cells previously. Undoubtedly, there must be vascular stasis at times, and if there is vascular stasis due to sickling or for some other reason, one would expect that sickling very soon would take place simply by the mechanism of anoxia, subsequent sickling, more stasis, then complete obstruction of a vessel, and finally infarction. Infarctions are found, as Dr. Taylor said, in practically all organs of the body.

The postmortem findings in these patients are relatively non-specific. Quite consistently, one finds congestion of the vessels, particularly of the small vessels. One finds pulmonary hemorrhage and pulmonary edema. However, I would remind you that such findings are those found in shock—as a matter of fact, the findings of shock due to almost any cause except exsanguination. For this reason, some have proposed that shock is the initial feature in such a crisis, and that the stasis and vascular obstruction due to sickling are secondary. Both these viewpoints can be criticized, however, since neither makes any provision for an inciting factor.

There is some evidence that erythrocytes are, in fact, trapped during a sickling crisis, and the best evidence is in the report of one case of a small child, less than a year old or about a year old, who

was in sickle-cell crisis and in fact was also in shock. As Dr. Taylor mentioned, the two are not always related. At the time of venipuncture, this child's blood was described as having the appearance of pink water, and the hemoglobin level was less than 1 per cent, suggesting very strongly that trapping of erythrocytes had occurred at some point in the circulation.

For the sake of completeness I think we should speak also of the inciting causes that are mentioned in the literature. The most common one, certainly, is infection. In the reports, most of the infections were inferred from the presence of fever, without much substantiating evidence. It is also said that fever in itself can cause or incite a crisis. In the reports that I saw, I found it very difficult to separate the fever attributed to infection or fever attributed to pyrogenic reaction (for example, following blood transfusion), from the fever of the crisis itself. Other conditions which supposedly incite sickle-cell crisis have already been mentioned, for example the altitude factor. Injuries such as toothache, dog bite, etc. are so minor that one wonders whether they may not have been merely coincidental.

I shall now proceed with slides of this case. Grossly, the liver was congested and enlarged. The kidneys were not particularly abnormal, but the brain was edematous. Those, in essence, constitute the gross abnormalities.

This is a tri-chrome stain of the kidney and is intended to illustrate one point—the intense capillary congestion. You see the capillaries are packed with erythrocytes, and the vessels between the proximal tubules contain large numbers of erythrocytes. Relatively little or no plasma is demonstrable. That may be significant. The next slide is a higher power view of a portion of the glomerulus. Here you can see the capillaries jam-packed with sickle-cells.

The next slide is a section taken primarily to demonstrate the sickling which was very widespread in all of the tissues examined. The cells, as you know, are not truly sickle-shaped. Most of them are simply elongated and pointed at the end. There are some actual sickle-shaped forms, some triangular forms and all sorts of bizarre variations. As evidence of previous hemolysis, there is pigment in the renal tubules. I would caution you that most of the pigment seen here is a common artifact which we recognize as a combination of hemoglobin and formalin. Some of the pigment in the renal convoluted tubules was iron-positive, and was identified as being of blood origin and not an artifact.

The next slide is of the lung, and is intended mainly to show the intense vascular congestion, not only of the large vessels but also of the whole capillary bed. It is representative of the entire lung. Faintly, in the alveolar spaces, one can see the greenish stain which represents protein—a

minimum amount of protein, because the boy didn't live long enough to extravasate a lot of protein and concentrate it. This protein represents edema fluid.

The next slide is another area from the lung—again with tremendous congestion, and in addition to the edema, areas of hemorrhage.

The next slide is liver. The purplish interlacing strands of tissue represent what is left of the liver cells. In between them are intensely congested sinusoids filled with blood. Over at the left is an area of complete dissolution or necrosis of the liver cells. There is little or no acute inflammatory reaction because the process was too acute to permit that. Possibly, there are few inflammatory cells because the circulation may have been very much impaired in that portion of the liver.

The next slide is a higher magnification of the liver, and shows a few sickle-cells and quite a bit of blood pigment which reflects high, long-standing, chronic hemolytic anemia. Here is one of a number of angular crystals which appear to be hemoglobin free of the red cell envelope.

The next slide is from the white matter of the brain, and displays a vessel packed with erythrocytes. These circles—empty spaces—are areas of edema in and around glial cells. This next, again is a slide from the white matter of the brain, and again it shows the vacuoles of the edema fluid and vessels congested with sickle-cells.

The next slide is a gross photograph which includes approximately two-thirds to three-fourths of the formalin-fixed spleen. The spleen was about the size of the phalanx of a finger. The following photograph shows the cut surface. Here is a little bit of splenic substance. The rest is all gray, and was grossly fibrous, wrinkled and scarred. The next photomicrograph is a low-power view of the spleen. It shows a very much wrinkled capsule. These various blue areas are deposits of a combination of calcium and iron. They are the remains of old infarcts. The other remains of the old infarcts are represented by fibrous tissue, as is shown in the next slide. This is a high power to show deposition of iron and calcium in the sclerotic vessels. This represents the remains of an old infarct. This is not specific for sickle-cell disease; the massive infarction is, but the iron and calcium deposition is not.

The next slide is a tri-chrome stain of collagen stained green, and splenic tissue stained purple. This depicts the ratio of remaining splenic tissue to scar tissue. The spleen is scarred, but not as a result of a massive infarction. If it had been a single infarction, the spleen would probably have fallen from its hilus. The scars are due to multiple small infarcts, widely enough separated timewise to have permitted healing and scarring of the areas of infarction.

Dr. Gisela Abbo, Medicine: How can you speak of an absolute increase in sickle-cells if the per-

centage remains the same before, during and after crisis?

Dr. Zimmerman: There might be an increase if sickled and normal cells sequestered in the same proportion. This raises another point, however. Some authorities claim, or rather claimed, that formalin fixation induces sickling. The present concept is that formalin fixation does induce sickling, despite the fact that one can use it clinically to demonstrate sickling in a wet smear. I mentioned that tissues were put in formalin more than 24 hours after death. I suspect that a lot of the sickling is a postmortem phenomenon, due to post-mortem anoxia prior to fixation.

Dr. Henry Hamilton, Internal Medicine: Perhaps we may indulge in a little speculation here. After viewing these most remarkable slides, one can't help being impressed by the primary lesion of capillary occlusion by red cells without adjacent tissue hemorrhage. We should give consideration to the use of heparin that was suggested earlier. It sounds like a good idea. I don't know whether it has been tried before or not. It is known that de-oxygenation of the sickle-cells causes a polymerization of the S-hemoglobin, with a true bonding between separate hemoglobin molecules. I can visualize changes in the electrostatic charge on the cells or some resultant bonding between cells causing an increased viscosity of blood and sludging of cells in capillaries. The net result is death of tissues deprived of oxygen. We face the hard reality that these patients *die*, as Dr. Taylor indicated. Few reach age 20.

There is a precedent for the use of heparin in reversing the ill effects of sludged blood. For example, Dr. Sheets and I used heparin to break up sludging of blood which occurred in a woman with red-cell clumping because of a very strong agglutinating Coombs' positive antibody. In another patient with thrombocytosis causing the sludging and hemolysis and hemorrhage, the process was reversed with heparin. Heparin works in one way by imparting an electronegative charge to the cells, thereby causing them to repel each other and at least stay separated until they get out of the capillary bed and become oxygenated in their next cycle through the lung.

There are a few points regarding falciparum malaria that we should consider. This form of malaria may produce symptoms in a few minutes. Going over this protocol and knowing the patient had been in an area where falciparum malaria was present, we should not exclude plasmodium falciparum malaria short of making a microscopic study of the brain. Because of the internal sporulation of this parasite, with local thrombosis of vessels, say in brain or viscera, a great variety of symptoms may appear without there being a trace of the parasites in the peripheral smear. With this disease, a person may be "apparently well," but may suddenly have a convulsion, develop other

central nervous system symptoms and die within a few hours. When I was in a malaria area taking care of many patients with plasmodium falciparum malaria, we put this type of malaria at the head of our differential diagnosis list for persons exhibiting central nervous system symptoms, mental confusion and convulsions, with or without fever. Splenomegaly is a poor guide in the differential diagnosis of malaria. I have treated many patients with proved malaria whose spleens were not demonstrably enlarged.

Dr. Zimmerman: In these patients with acute, fulminating falciparum malaria, how much jaundice and how much fever does one find?

Dr. Hamilton: Some people will have jaundice, and others will have none. Jaundice doesn't help a bit in the diagnosis of malignant tertian malaria. The disease is often characterized by an erratic fever curve. The patient may be afebrile, or have a subnormal temperature. This is where one can be completely thrown off.

Unidentified Questioner: Is it true that a patient with sickle-cell anemia cannot get malaria?

Dr. Hamilton: People with sickle-cell disease can

get malaria, but the incidence is reported to be lower than among individuals with normal hemoglobin types.

ANATOMIC DIAGNOSES

- 1. Sickle-cell anemia (clinical)
- 2. Sickle-cell crisis (due to dog-bite)
- 3. Fibrosis of spleen
- 4. Congestion of brain, liver, lungs and kidneys, severe
- 5. Focal necrosis of liver.

STUDENTS' DIAGNOSES

- 1. Leptospirosis
- 2. Sickle-cell anemia crisis
- Other possibilities:
- 1. Fulminating infectious hepatitis
- 2. Malaria

DR. TAYLOR'S DIAGNOSES

- 1. Sickle-cell anemia
- 2. Sickle-cell crisis with central nervous system thromboses

Coming Meetings

IOWA	
June 10-14	Current Topics in Internal Medicine (American College of Physicians). State University of Iowa, Iowa City
CONTINENTAL U. S.	
June 6-8	American Geriatrics Society. Queen Elizabeth Hotel, Montreal, Canada
June 7-9	Society of Biological Psychiatry. Claridge Hotel, Atlantic City
June 8-9	American Association of Neuropathologists. Dennis Hotel, Atlantic City
June 9-15	Traineeships for the General Practitioner. University of Nebraska College of Medicine, Omaha
June 10-12	American Neurological Association. Claridge Hotel, Atlantic City
June 10-13	Forty-eighth Annual Convention of the Catholic Hospital Association. Conrad Hilton Hotel, Chicago
June 10-14 & June 17-22	Histochemistry. University of Kansas Medical Center, Kansas City, Kansas
June 13-14	American Rheumatism Association. Claridge Hotel, Atlantic City
June 13-15	Endocrine Society. Chalfonte-Haddon Hall, Atlantic City
June 13-16	American Therapeutic Society. Shelburne Hotel, Atlantic City
June 13-16	American College of Angiology. President Hotel, Atlantic City
June 13-17	Twenty-ninth Annual Meeting of the American College of Chest Physicians. Ambassador Hotel, Atlantic City
June 14-15	Pediatric Ophthalmology. University of California, Los Angeles
June 14-16	Congress of Scientists on Survival. Biltmore Hotel, New York City
June 15	Eleventh Annual Conference on Disaster Medical Care (AMA Council on National Security). Traymore Hotel, Atlantic City
June 15	American Academy of Tuberculosis Physicians. Ritz-Carlton Hotel, Atlantic City
June 15	American Association for the Study of Headache. Claridge Hotel, Atlantic City
June 15-16	American Diabetes Association. Chalfonte-Haddon Hall, Atlantic City
June 15-16	Anxiety and Depression (Academy of Psychosomatic Medicine). Marlborough Blenheim Hotel, Atlantic City
June 16	Society for Vascular Surgery. Atlantic City
June 16	Society for Surgery of the Alimentary Tract. Shelburne Hotel, Atlantic City
June 16-20	Annual Meeting of the American Medical Association. Convention Hall and Traymore Hotel, Atlantic City
June 16-20	Society for Adolescent Psychiatry. Atlantic City
June 17-20	Society for Investigative Dermatology. Atlantic City
June 17-29	Association for Research in Ophthalmology. Atlantic City
June 21-22	Diseases of the Kidney. University of California, Los Angeles
June 23-29	Ninth Annual General Practice Review (University of Colorado School of Medicine). Denver
June 24-27	American Orthopedic Association. Homestead, Hot Springs, Virginia
June 24-28	The Psychosomatic Illnesses (American College of Physicians). University of Colorado Medical Center, Denver
June 26-29	Tenth Annual Meeting of the Society of Nuclear Medicine. Queen Elizabeth Hotel, Montreal, Canada
June 28-29	Minor Surgery. University of California, Los Angeles

- June 30-July 4 **International College of Surgeons.** Bretton Woods, New Hampshire
- June 30-July 5 **Ophthalmology.** Colorado Springs
- July 3-7 **Advanced Seminars in Dermatology (University of California Alumni Association).** Tahoe Alumni Center, Lake Tahoe, California
- July 3-7 **Advanced Seminars for General Practitioners (UCLA).** University of California Residential Conference Center, Lake Arrowhead, California
- July 8-10 **Obstetrics and Gynecology.** University of Colorado Medical Center, Denver
- July 8-19 **West Coast Institute on Alcoholism (National Committee for the Prevention of Alcoholism).** Loma Linda University, Los Angeles
- July 10-14 **Advanced Seminars in Pediatrics (UCLA).** University of California Residential Conference Center, Lake Arrowhead, California
- July 12-13 **International Conference on Renal Hypertension.** Columbus, Ohio
- July 12-13 **Seventeenth Annual Rocky Mountain Cancer Conference (Colorado Division of the American Cancer Society and the Colorado Medical Society).** Brown Palace Hotel, Denver
- July 14-19 **Second International Conference on Congenital Malformations (National Foundation).** Americana Hotel, New York City
- July 18-20 **Dermatology.** University of Colorado Medical Center, Denver
- July 29-Aug. 9 **East Coast Institute on Alcoholism (National Committee for the Prevention of Alcoholism).** American University, Washington, D. C.

ABROAD

- June 9-15 **International Hospital Congress.** Paris. Write: J. C. J. Burkens, M.D., International Hospital Federations, 24/6 London Bridge Street, London, SE1
- June 14-16 **Society of Obstetricians and Gynaecologists of Canada.** Delawana Inn, Ontario
- June 23-28 **World Commission on Cerebral Palsy.** Copenhagen. Write: P. Hoeg Albrethsen, Samfundet for Vanfore, Esplanaden 34, Copenhagen K
- June 23-28 **International Society for Rehabilitation of the Disabled.** Copenhagen. Write the Society, 701 First Avenue, New York City
- June 27-29 **International Congress on Alimentary and Digestive Allergy.** Vichy, France. Write: Pierre Lignon, 24 boul des Capucines, Paris 9
- June 27-29 **Neurosurgical Society of America.** London. Write: Courtland H. Davis, Jr., M.D., Bowman Gray School of Medicine, Winston-Salem, N. C.
- June 28-30 **International Congress on Food and Digestive Allergy.** Vichy, France. Write Pierre Lignon, 24 boul des Capucines, Paris, 9^e
- July 2-4 **Ciba Foundation Symposium on Cellular Injury.** London. Write: Ciba Foundation, 41 Portland Place, London W1
- July 14-27 **Fifth International Postgraduate Course in Reconstructive Surgery of the Nasal Septum and External Pyramid.** University of Leiden, The Netherlands. Write: Prof. Dr. H. A. E. van Dishoeck, University of Leiden, Academisch Ziekenhuis, Leiden, The Netherlands. Or American Rhinologic Society, 530 Hawthorne Place, Chicago 13
- July 21-25 **Third International Congress of Group Psychotherapy.** Milan, Italy. Write J. L. Moreno, M.D., Box 311, Beacon, New York
- July 22-26 **World Federation for Mental Health.** Amsterdam. Write: 19 Manchester Street, London W1
- July 23-27 **International Society of Chemotherapy.** Liederhalle, Stuttgart, Germany. Write: Clemens A. Hackethal, 318 West Woodruff Avenue, Toledo 2, Ohio
- July 28-Aug. 1 **International Psycho-Analytical Congress.** Stockholm. Write L. Börge Löfgren, M.D., Narvavägen 25, Stockholm
- July 31-Aug. 16 **Sixth Annual Refresher Course (University of Southern California).** Hawaii and on board the *S.S. Lurline*

- Aug. 9-15 **International Congress on Nutrition.** Edinburgh, Scotland. Write: Secretary 6th International Congress on Nutrition, Department of Clinical Chemistry, Royal Infirmary, Edinburgh
- Aug. 11-16 **Sixth International Congress of Gerontology.** Copenhagen. Write: P. From Hansen, M.D., D.I.S. Congress Service, 19 Sankt Peders Straede, Copenhagen
- Aug. 25-28 **Fifth European Congress on Rheumatic Diseases.** Stockholm. Write: Olle Lövgren, M.D., St. Eriks Sjukhus, Stockholm
- Aug. 26-30 **International Congress of Nephrology.** Prague, Czechoslovakia. Write: V. Fencel, M.D., Institute of Cardiovascular Research, Prague 4-Krc
- Aug. 26-30 **International Symposium on Radiological Health and Safety.** Vienna. Write: International Atomic Energy Agency, 11 Kartner Ring, Vienna 1
- Sept. 1-7 **International Congress on Orthopaedic Surgery and Traumatology.** Vienna. Write: Karl Chiari, Grillparzerstrasse 14, Vienna 1
- Sept. 2-6 **International Congress on Clinical Pathology.** Mexico City. Write: E. Cervera B., M.D., Asociacion Mexicana de Laboratorio Clinico, Durango 213, Mexico 7, D.F.
- Sept. 2-10 **International Congress of Genetics.** The Hague, Netherlands. Write: S. J. Geerts, 14 de Monchyplein, The Hague
- Sept. 9-13 **Conference on Cellular Control Mechanisms and Cancer.** Amsterdam. Write: O. Mühlbock, Netherlands Cancer Institute, Antoni van Leeuwenhoek-Huis, Sarphatistraat 108, Amsterdam C
- Sept. 15-21 **International Congress on Occupational Health.** Madrid. Write: D. P. Sangro Torres, M.D., Instituto Nacional de Medicina y Seguridad del Trabajo, Ciudad Universitaria, Madrid
- Sept. 16-20 **Ciba Foundation Guest Symposium on Mother-Infant Interaction.** London. Write: Ciba Foundation, 41 Portland Place, London W1
- Sept. 16-22 **Ninth Congress on Vital Substances, Nutrition and Diseases of Civilization.** Lindau and Gengen, Germany. Write: Bemeroderstrasse 61, Hanover-Kirchrode, Germany
- Sept. 19-21 **Congress of the International Society of Cardiovascular Surgery.** Rome, Italy. Write: H. Haimovici, M.D., 862 Park Avenue, New York 21
- Sept. 19-22 **Fifth International Congress of General Practice.** Salzburg, Germany. Write: K. Engelmeier, M.D., Internationale Gesellschaft für Praktisch Angewandte Medizin, Langestrasse 21, Oelde, Westf. West Germany
- Sept. 22-28 **Seventeenth World Medical Assembly.** Mexico City. Write: Harry S. Gear, M.D., 10 Columbus Circle, New York 19
- Sept. 23-27 **World Federation of Neurology.** Strasbourg, France. Write: H. Fishgold, M.D., Institut Bunge, 59 rue Philippe Williot, Berchem-Antwerp, Belgium
- Sept. 24-28 **Seventeenth International Tuberculosis Conference.** Rome. Write: Sec.-Gen. G. l'Ettore, via Ezio 24, Rome
- Sept. 26-28 **International Congress of Therapy.** Brussels. Write: Dr. Bauduin, Faculté de Médecine, 115 boul de Waterloo, Brussels
- Oct. **American Society of Plastic and Reconstructive Surgery.** Hawaiian Village Hotel, Honolulu. Write: T. Ray Broadbent, M.D., Secretary, 508 E. South Temple, Salt Lake City
- Oct. 6-11 **International Congress of Clinical Pathology.** Mexico City. Write: E. Cervera, M.D., Durango 213, Mexico 7, D.F.
- Nov. 5-13 **Ninth Congress of the Pan-Pacific Surgical Association.** Honolulu. Write: F. J. Pinkerton, M.D., Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13, Hawaii
- Nov. 13-Dec. 10 **First Pan-Pacific Mobile Educational Lecture Seminar.** New Zealand, Australia, Thailand, the Philippines, Hong Kong and Japan. Write Dr. F. J. Pinkerton, Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13



THE WORKING MOTHER

A recent news story on the subject of the working mother pointed out that a revolution, which has been gradually taking place in this country, is having a profound effect upon the very core of our social structure—the American home. Between 1951 and 1961, it is reported, there was a 66 per cent increase in the proportion of employed mothers with children of school age. In 1961, 45 per cent of the mothers of all children between the ages of 6 and 17, and 22 per cent of the mothers of preschool-aged children, were employed. In the State of Iowa, it is estimated that 3 out of every 10 women have jobs, and that of every six mothers with children under the age of six, one is employed.

In counseling the housewife, a physician should insist upon a serious consideration of the divided role for the wage-earner and mother. He must insist that she weigh the pros and cons of such a dual role objectively and carefully—the possible impact upon her marriage, her children and her home. It must be recognized that some women are employed from necessity and that others want careers for reasons other than pecuniary return, but probably the majority of women who seek employment are motivated merely by a desire to provide themselves and their families with “the better things of life.” What commodities are regarded as “the better things of life” ordinarily reflect the values such a woman acquired in her own home during her developmental years, and they vary with each individual.

It is regrettable that numerous articles in lay magazines, recently, have depicted the role of wife and mother for the intelligent woman in an adverse light. It is said that though a woman must accept this role, it imposes such restrictions that she loses her identity as an individual, and finds the role frustrating, boring and disappointing. The implication is that marriage and the responsibilities of family life so limit the individual that she is unable to make the most of her capacities and talents. The role of wife and mother is not enough; she must also find full identity and fulfillment in socially-useful work outside the home. This point of view attributes the unhappy state of the married woman to the role *per se*, and empha-

sizes that socially-useful work will provide fulfillment and contentment.

It would seem that the bored and discontented housewife can attribute her unhappy state to her own intellectual and physical inertia. The free hours granted the modern woman by the advantages of modern household equipment provide unlimited opportunities for growth and for fulfillment in creative activity undreamed of by her mother and grandmother.

The role of wife and mother continues to be the most important, the most challenging, the most rewarding, the most interesting occupation for the American woman. Competing in the market place certainly is no guarantee of contentment or of fulfillment.

It is conceivable that there is some relationship between the growing numbers of working wives and the rising divorce rate in this country. Marital difficulties and friction over economic matters are said to occur more frequently when the wife is working. Jeopardy of the husband's identity as the dominant partner is a definite hazard to the marriage when both are employed, and the working wife is prone to lose her femininity and feeling of dependence which are essential to the male ego.

Recent surveys among school children are said to indicate that there is no difference between the children of working mothers and the children of mothers at home. The surveys considered school achievement, social development, personality characteristics and family relationships. The same findings were said to obtain among pre-school children and youngsters in the elementary grades. Such reports are difficult to reconcile with the startling increase in juvenile delinquency, in promiscuity among adolescents, and the rapid rise in venereal disease among teen-agers. Antisocial behavior of youth is no longer restricted to the children of low-income families, but occurs at all economic levels.

Psychologists tell us that no other factor is so important in the development of a strong and resilient personality and sound character as a closely-knit family life. No one can deny that it is the mother who shapes this pattern, and it is a reasonable assumption that the vast majority of women consider it a serious responsibility and a full-time task. Many people blame parents for the antisocial behavior of the youth of today, and attribute it to lack of discipline and to inadequate supervision. The mother who spends eight hours a day in the market place is under a great handicap in the performance of her role, and she cannot depend upon others to assume the responsibility of rearing her children.

In our present economy there is little justification for the high proportion of working mothers. The welfare of children and the shaping of their characters and personalities, take precedence over all other obligations within the family. Unless it is

absolutely necessary for the mother to support the family, her role demands a full-time dedication to her responsibilities. This does not preclude intellectual and cultural growth, and it does not mean that a housewife must be a slave to her family. She needs the change of climate and of tempo which stimulating company and challenging interests can provide.

It would appear that our educational program for young women should give greater emphasis to human relationships and to the true significance of marriage, to prepare her to find a rewarding and a complete life in her biologic role and as an intelligent citizen trying to make this a better and a happier world.

A PLEA FOR PERSPECTIVE

In a stimulating discussion of basic genetics in a symposium at the University of Missouri, Gardner¹ presented some startling figures concerning the population explosion which emphasize the fact that it is one of the most serious problems confronting this troubled world. To quote this geneticist: "According to the population reference bureau, the world population is increasing at the rate of some 50,000,000 per year, 140,000 per day, 6,000 per hour. At the current rate, there will be two times as many people as there are at the present in one more generation. It is estimated that there will be six billion people on earth in 2000 A.D. Of all the people who have ever lived, about 1/20 are alive today. Two-thirds of the people constituting the present world population are undernourished and about one-half are continually hungry."

An equally provocative article on public health practices in the Congo by Dickerson² stated that 90 per cent of Africa's 200,000,000 black people are in some phase of starvation, and the primary reason for this is that the food supplies in Africa are critically low, and in the area of the Congo there is a great scarcity of animal protein. In a four-year period from 1956 to 1960, Dickerson served as a public health official among a primitive tribe of 140,000 population in the Congo. In this tribe the infant mortality was 80 per cent. Of the children surviving infancy, no more than 50 per cent reached maturity. If they reached adulthood, the chance of their living past 40 years was about one in 20. The protein deficiency disease kwashiorkor caused death in 20 to 30 per cent of the children two to three years of age. Malnutrition is responsible in a large measure for the African's short span of life, for his stunted growth, for his mental lethargy, and for his great susceptibility to disease.

According to Dickerson, sickness is the rule among the natives of Africa. It begins before or at birth and continues until death. Four or more diseases at one time in a single individual are not at all unusual. Every tropical disease poses a serious problem in public health, and since many areas of central Africa are no longer under the

colonial administration of Belgium, Britain or France, there has been a breakdown of public health services which will have serious consequences. During his experience in the Congo the author saw malaria, trypanosomiasis, schistosomiasis, leprosy, intestinal infestations, tuberculosis, ankylostomiasis, filariasis, mycosis of all kinds, yaws, amebiasis, bacillary dysentery, tropical ulcers, venereal diseases, plague, typhus, yellow fever and smallpox.

No fewer than three problems of utmost seriousness have been presented here: (1) the population explosion that threatens to overpopulate our planet; (2) disparities in the distribution of food and of the know-how for producing it; and (3) the eradication of diseases that still make life painful and short for immense numbers of our fellow human beings. When one contemplates these thoroughly remediable miseries that exist on this planet, it seems obvious that the energies of mankind should be directed toward their solution, rather than expended on the exploration of outer space. The billions being expended in an effort to reach the moon might better be spent to correct some of the inequities which prevail among the peoples of this earth.

Apropos of the direction in which the energies of mankind should be guided, Arnold J. Toynbee, in the last of a series of lectures on "The Philosophy of History," at Grinnell College, stated, "This education in a classical culture and in a higher religion has a double advantage. It does not take one out of our human world into the non-human world of protons and nebulae.

"This is of great practical value, because human beings are good at dealing with non-human nature, but bad at dealing with human nature.

"Therefore, we cannot afford to neglect the humanities. To drop these and to fly off into physical science is a form of escapism and will bring its nemesis."

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2. Dickerson, M. S.: Public health practices in the Congo. Texas State J. Med., 59: 325-328, (April) 1963.

Iowa in June

Cherries in the garden,
Red roses on the lawn,
The wind across the wheat fields,
The thrush's song at dawn.

The checkered fields are tufted,
With slender, tender green.
Honey in the clover
For droning bees to glean.

The red winged blackbird follows
Behind the busy plow.
Heaven smiles. Earth answers.
June is with us now.

PERIANAL ABSCESSSES AND FISTULAE

An analysis of 1,000 cases of perianal abscess and fistula, by Hoffman and colleagues,* of the Mayo Clinic, revealed that underlying systemic disease was present in 17 per cent of the cases. As a result of the experience, it was emphasized that careful gastrointestinal investigation, particularly in the younger individual, is a very wise procedure in the patient with perianal disease.

The 1,000 patients in the Mayo series were divided into three groups. Group I was composed of those patients in whom the opening of the fistula was distal to the anal crypts. This type of fistula is the result of the infiltration of organisms into the subcutaneous tissues from an anal fissure. This results in a subcutaneous abscess which ruptures and leaves a small fistulous tract, the so-called subcutaneous fistula. Group II was made up of those patients in whom the primary opening was in the anal crypts or higher, with spread of organisms into the surrounding tissue and resulting abscess formation. Spontaneous rupture or surgical incision of the abscess results in the formation of a fistula. This is the most common type of perianal fistula and is the result of the breakdown of the usual defense barriers in the anal crypts. Group III included those patients who had perianal abscesses only.

In Group I, with subcutaneous fistulas, there were 355 patients. Fifty-five per cent were males and the average age was 54 years. There was only one patient less than 20 years of age, and he had an associated chronic ulcerative colitis. This patient had regional enteritis, six had chronic ulcerative colitis, and 21 had diabetes mellitus. In all of this group, there were 32 patients, or 9 per cent, with associated disease.

Group II consisted of 497 patients, 72 per cent of whom were males, and the average age was 49 years. Twenty-three of those patients had regional enteritis; 50 had chronic ulcerative colitis; and 42 had diabetes mellitus. There were an additional 25 patients with various other associated diseases. Thus, in the group with the most common type of perianal diseases 143 patients or almost 29 per cent had an associated disease.

The 148 patients with perianal abscess only composed Group III. The average age was 47 years, and 69 per cent were males. In this group, six patients had regional enteritis; 15 had chronic ulcerative colitis; four had diabetes mellitus; and 18 patients had a variety of other diseases. Of the 148 patients in the group with perianal abscess only, 43, or 29 per cent, had associated diseases.

In the past, tuberculosis was a common cause of fistula *in ano*, but in this series, culture and

guinea pig inoculation were positive for *m. tuberculosis* in only six patients. Cultures taken in 65 cases grew out only those organisms which constitute the normal fecal flora.

In their series, the Mayo group found that 4.6 per cent of patients with perianal abscesses or with anorectal fistulae had regional enteritis. In the younger age groups, however, 20 of 52 patients with anorectal fistulas, between the ages of 11 and 30 years, had underlying regional enteritis.

In the study, chronic ulcerative colitis was the most commonly associated disease. It was present in about 10 per cent of the patients, and in the younger age groups, 15 of 52 patients with "anorectal" fistulae had chronic ulcerative colitis.

Diabetes mellitus was associated in 67 patients, and this disease was found mostly in older patients with anorectal disease.

The authors conclude that subcutaneous fistula is of frequent occurrence in the patient with diabetes, but that this particular type of fistula occurs infrequently in inflammatory diseases of the bowel. Anorectal fistulae which arise in the anal crypts or higher are frequently associated with inflammatory disease of the bowel, particularly in patients in the second and third decades of life. In the older patient, an associated diabetes mellitus should be looked for.

POSTMATURITY IS LIFE-THREATENING

J. C. McClure Browne, a London obstetrician,¹ points out that there are two directly opposed schools of thought on the subject of postmaturity. One school denies that there is any problem in prolonged pregnancy that warrants any action. The other school, to which Dr. Browne belongs, contends that prolonged pregnancy constitutes a significant and an avoidable hazard to the life of the child.

The author urges that the physician make every effort at every stage of pregnancy to assess the correctness of the estimated date of conception and of the supposed duration of the pregnancy. When 42 weeks of pregnancy have been completed and the woman is not in labor, it is his practice to induce labor by the surgical rupture of the membranes. Induction may be indicated at 40 to 41 weeks in the older patient—particularly if there is the slightest evidence of hypertension or of toxemia.

From Dr. Browne's own series at Ham-smith Hospital, during the years 1960 and 1961, a total of 4,202 women were delivered between the thirty-eighth and the fortieth weeks, and the incidence of fetal distress necessitating operative delivery was 1.5 per cent. In contrast, of 520 women who delivered after completion of 41 weeks, during the same two years, the incidence of fetal distress demanding operative delivery was 6.5 per cent.

* Rowls, W. E., Martin, W. J., Spencer, R. J., and Hoffman, H. N.: Perianal abscess and anorectal fistula. *MINN. MED.*, 46:327-331, (April) 1963.

Further to substantiate his argument, the author used data procured from an unusual British survey conducted in 1958. In one week in March, 1958, the National Birthday Trust of Britain conducted a detailed study of every birth in England and Wales, and of all the perinatal deaths that occurred in the following 13 weeks. The pregnancies and labors which occurred in the one week of the study were considered representative of the succeeding 13 weeks. Eighty-eight per cent of the babies lost were subjected to postmortem examination by a small, coordinated team of pathologists.

During the main week of the British survey, there were 16,986 deliveries. Assuming that the number of births in that week were representative of the whole three-month period, it was assumed that some 200,000 births occurred during the greater length of time. During the three months there were 7,927 perinatal deaths. Some of the data obtained in this survey relative to prolonged pregnancy were summarized. The incidence of prolonged pregnancy was 10.4 per cent, if pregnancies lasting longer than 41 weeks (287 days) were considered, and was 3.5 per cent if pregnancies lasting longer than 42 weeks (294 days) were considered. The perinatal death rate after pregnancies of 39 to 41 weeks was 10.5 per 1,000. The ratio doubled by 43 weeks, more than tripled by 44 weeks, and was five times higher after 45 weeks. When congenital anomalies and antepartum hemorrhage were excluded, the perinatal mortality after 39 to 41 weeks was 9.5 per 1,000.

In the babies born to patients with toxemia manifested by even one blood pressure reading of 140/90 or higher, or by hypertension with albuminuria, there was a very significantly greater perinatal mortality. As compared with infants delivered by normal women between 39 and 41 weeks after conception, the perinatal mortality rate is doubled at 42 weeks, tripled at 42½ weeks, quadrupled at 43, and more than quintupled at 44 weeks.

From the survey it was also found that maternal age at the time of delivery had a significant influence on the perinatal death rate, both in primiparas and in multiparas. The older the woman, the sharper was the increase in the perinatal mortality rate as pregnancy continued beyond 41 weeks.

In regard to fetal distress, the study clearly confirmed that prolonged pregnancy has a distinctly adverse effect on the fetus—increasingly so if the pregnancy is prolonged after the end of 41 weeks, and somewhat worse in primiparas than in multiparas.

There is evidence of profound placental changes in prolonged pregnancy—a degeneration as the result of the aging process. There is calcification of the placenta, a diminution of liquor amnii, a slowing of the maternal placental circulation in some cases, possibly a lowered oxygen tension, and a tendency for the baby to fail to grow.

It is Browne's policy to make every effort to

evaluate the correctness of dates at every stage of pregnancy. After 42 weeks, if the woman is not in labor, surgical induction is carried out, whatever the state of the cervix. If the liquor amnii is scanty and stained with meconium, and if there is any evidence of fetal distress, immediate cesarean section is done. If induction fails to effect delivery in 48 hours or if fetal distress develops, lower-segment cesarean section is performed. Labor may be induced earlier (at 40 to 41 weeks) in the older patient, and it surely is induced if there is the slightest indication of toxemia.

In 1954, Clifford² reported the clinical and pathologic findings in 37 liveborn, postmature infants. Postmaturity as defined by Clifford and the Boston group was a pregnancy of 300 days, and the incidence was reported as about 5 per cent. In contrast to the British report, postmaturity was a problem only in primiparas, but for them prolonged pregnancy ranked second only to prematurity as the major cause of fetal and neonatal mortality.

According to Clifford, two progressive changes *in utero* were thought to explain the findings: maceration of the skin secondary to disappearance of the protective layer of vernix; and degeneration of the placenta which occurred as a result of the aging process. The clinical findings were divided into three groups according to the stage of dysfunction encountered:

1. *Stage One*, in which the skin shows the effects of loss of vernix. The skin is dry, cracked, parchment-like or peeling. The infants are long and thin, and show evidence of recent weight losses, the result of a failure of the placenta to provide adequate nutrition.

2. *Stage Two*, in which the findings of the first stage are present, but in addition the amniotic fluid, the placental membranes, the cord and the skin are all stained green—evidences of severe intrauterine anoxia.

3. *Stage Three*, a continuation of the second stage. The skin, nails and cord are now stained a marked yellow color.

The pathological findings are those associated with intrauterine asphyxia. The lungs show evidence of aspiration of amniotic fluid, meconium, squamous cells and amorphous debris. There are areas of patchy atelectasis, and areas of emphysema of the lungs and mediastinum are frequently found.

Clifford concludes that placental dysfunction is a particular hazard in the older postmature primigravida. One baby in three will die *in utero* or in the neonatal period. In general, postmaturity presented no added risk to the babies of multiparous mothers.

Though Clifford was of the opinion that postmaturity was a problem only in the older primigravida, the British group found it a problem in both multigravidas and primigravidas, though more so in the latter. Though he acknowledges that there are two opposed schools of thought as

regards the management of postmaturity, Browne urges the obstetrician to take prompt action. Surgical induction to effect delivery is justified at 42 completed weeks, or earlier if toxemia is or has been present, or if the woman is close to the end of the child-bearing age range or is losing weight.

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2. Clifford, S. H.: Postmaturity—with placental dysfunction; clinical syndrome and pathologic findings. *J. Pediat.*, 44:1-13, (Jan.) 1954.

Once Burned—Twice Cautious

Representatives of the United Mine Workers of America were a principal driving force behind recent efforts to pass a pre-paid medical care bill in West Virginia. U. S. NEWS AND WORLD REPORT, in its edition of March 25, 1963, points out some interesting facts about previous UMW ventures into the medical field.

According to the article, most union pension plans are operated on an actuarial basis with trust funds large enough to finance the promised benefits for the lifetime of the retired workers involved. The UMW Welfare and Retirement Fund, however, was set up on a pay-as-you-go basis without accumulating large reserves.

Because of this omission, the article cites the following results:

1. Medical benefits to miners and their families have been sharply curtailed.
2. An estimated 7,000 widows have not received the \$500 death benefits when their miner husbands died.
3. UMW hospitals are in deep financial difficulties—four must be sold by July 1, 1963.
4. The \$100 per month pensions of hard coal miners have been cut to \$30.
5. The \$100 per month pensions of soft coal miners have been cut to \$75.

These events prompted the hard coal miners to file suit, on March 11, against their own union!

The same union organization had the temerity to urge West Virginia citizens to accept another financially unsound scheme for pre-paid health care programs during the 1963 session of the State Legislature. Proponents insisted upon passage of a bill that would allow pre-paid medical plans which would not require maintenance of reserves on an actuarial basis or which would operate under insurance laws of the State.

On direct questioning at a legislative hearing on this matter, one of the principal sponsors of the bill, Senator William A. Moreland, commented that membership in such plans would be voluntary and, if funds on hand were insufficient to provide expected benefits, the consumer would be free to drop out. What, then, does the victimized miner or other subscriber to such a plan get for his investment after, for example, several years of paying premiums?

The miners and other citizens of West Virginia should have, by now, learned a lesson in regard to financially unsound programs supported by the UMW or any other group. Prepaid medical care programs, group practice or otherwise, should be permitted by law only if the subscriber is protected by the insurance laws.—*A guest editorial by Stephen D. Ward, M.D., and Joseph L. Curry, M.D., reprinted from the May, 1963 issue of the WEST VIRGINIA MEDICAL JOURNAL.*

Accident Survey in Six Iowa Counties to Be Studied for Causes and Prevention Measures

Machinery has been the leading cause of 416 accidents so far reported in a six-county Rural Family Accident Study being made by the Institute of Agricultural Medicine at the State University of Iowa. Machinery was involved in 25.5 per cent of the accidents, falls caused 12 per cent of the injuries, and auto accidents caused 10.1 per cent. Seven per cent of the injuries occurred in the house, hand tools and animals were each involved in 6.5 per cent, and 3.4 per cent of the accidents reported resulted from burns.

These preliminary findings are for the period from August through December and reflect only "reported accidents" in the study area of Cedar, Iowa, Johnson, Linn, Muscatine and Washington Counties. Physicians in the area are cooperating in the study. The statistics include both farm and non-farm accidents of residents in the six counties, with the exception of persons living in towns of more than 2,500 population. Directing the survey from the Institute in Iowa City are Clyde M. Berry, associate director of the Institute, L. W. Knapp, chief of the safety division, and William H. McConnell, Jr., safety engineer and field director for the study.

Injuries most frequently reported in the study, which will run one year, have been lacerations, fractures, sprains, and contusions, in that order.

The upper and lower extremities were involved most frequently, although 15 per cent of the injuries were to the head, with a majority of these occurring to young people under 21.

The largest number of accidents, 90, happened to people in the 45 to 64 age group, followed closely by the 25 to 44 age group with 82.

Sixty-eight accidents reported involved persons in the 6 to 16 age group, which may represent the highest injury rate of all groups, although the investigators point out that up-to-date information on population age is lacking.

Classification of accidents by day of the week indicates that peaks seem to occur on Monday and Thursday, with a gradual increase from Sunday through Saturday. However, more reports are

needed before any significance can be attached to this point, it was noted.

The survey pointed out that there seems to be a tendency for some farm workers or members of their families to treat rather severe injuries lightly and to go to a physician only when bleeding is profuse or the injury is coupled with a great amount of pain or discomfort.

A primary objective of the study is to provide a picture of the most frequent types of accidents encountered by rural families. More detailed studies of these accidents will then be made by the Institute staff to find the causes and possible measures to prevent such mishaps.

The Doctors' Image

In defining "image," the dictionary gives a variety of interpretations, but I believe that for our purposes the simplest definition is the following: "For those in medicine, an image is what the patient thinks when he views his doctor and the profession. He sees the sum total of his own and his family's experiences, and he blends this with the experiences of others. The patient sees medicine, or his own physician, in terms of the psychologic and emotional impact that he has experienced. The resulting image may be real or imaginary. Nevertheless, it is his, and his thoughts, words, and actions are based on this image."

The doctors of 35 to 40 years ago spent their days making house calls, seeing patients in their offices, doing obstetric cases in the home, and frequently doing emergency major surgery. Even in my younger days I assisted older surgeons in many procedures in the home, including tonsillectomies, D and C's, and an occasional hernia. This doctor was very close to his families; he knew their personal and socioeconomic problems very well; they depended on him and often revered him. His judgment and decisions were rarely questioned. It was unusual for him to be unavailable at any time of the day or night.

He had certain advantages: He was relatively free of tax burdens; it was most unusual if there was any threat of malpractice action; he was not beset by the multiple medical meetings that we contend with today; and his hospital staff appointments were not burdened with regulations concerning the meetings and committees that we know today. It was rare that there was any publicity concerning medications or medical matters. This status persisted until after World War II.

With the release of many doctors from service in 1946 and 1947, as well as graduating classes from accelerated courses, there was a sudden influx of men to be trained in specialties and to take refresher courses in specialties or in general medicine.

Doctors who began practice during this era found themselves extremely busy in a very short time. The result was that they were almost over-

whelmed with the demands on their time and resources.

The decrease in the number of general practitioners, with a corresponding increase in the number of specialists, made the former group work excessively and brought about more numerous referrals to the specialist. It also made it difficult for the private practitioner to be available as readily as his older colleague had been in years gone by, with the result that men could not meet the demands of their calls, and frequently were unavailable.

Partly as a result of this problem, the physician gradually educated his patients to come to his office. In turn, this developed a situation in which the waiting rooms were crowded, delays developed in his seeing patients according to schedule, and dissatisfactions arose in the minds of patients. Some practitioners reacted by becoming somewhat arrogant and aloof.

These changes have caused the average physician today to lose some of the warm human rapport that was so characteristic of what people nostalgically refer to as the "old time family doctor." I am sure that none of us wish to go back to that era, either as to the type of practice or availability of medications and technics. Many of the things that developed almost unnoticed have brought us to the point where many lay individuals feel that doctors, as a whole, are inclined to be unapproachable, that they are too affluent and do not have the personal interest in the patient that was characteristic of the older practitioner. Many patients feel that self-interest has taken the place of dedication. It is possible that the general commercialism of our times may be partly responsible for this impression.

If all these factors have influenced the current image of the physician, there are some statistics that show that our appearance in the eyes of the public is not so bad as it has been painted.

In a study by OPINION RESEARCH, it was shown that people not only have a very high regard for their own doctor, but also hold the medical profession in lofty esteem. In an article, which appeared in the DALLAS MEDICAL JOURNAL in May, 1961, C. Lincoln Williston stated that when medicine was compared with 15 other occupational groups, it was found that doctors stand highest on the scale of public favor. As evidence of the public's esteem for health, three other allied professional groups, nurses, pharmacists, and dentists, ranked two, three, and four, respectively. At the bottom of the scale were government employes, business executives, lawyers, actors, and finally labor leaders.

In an article in THE CHOICE OF MEDICAL CAREER, William B. Bean, M.D., professor of medicine at the University of Iowa, states:

". . . I defined the physician's essential quality as 'Caritas Medici,' using the Latin words because they not only defined the mores of the physician

of good will but embodied them in a rich expression with the freshness of the early morning dew still on it. The expression 'beside manner,' now much abused, captures some of the meaning. 'Caritas,' through vagrant changes, stands for charity and care, and carries implications of love and tenderness and dearness—of 'loving kindness.' But 'Caritas Medici,' a physician's caritas, means much more. It is that vigilant and humane insight and care, compact of wisdom and spirit, which the doctor owes his patient, be it for sympathy or discipline—the concept Francis Peabody epitomized beautifully for us once and for all in his statement: 'The secret of the care of the patient is in caring for the patient.'

I would like also to stress the importance that the main objective in medical treatment should be the treatment of the person as a whole, and not the disease alone. With the tremendous advancement in the field of the science of medicine, this attitude on the part of the physician is perhaps more important than ever before. In this way, the art of medicine can be revived and our relations with our patients, and the general public as well, enhanced.

In many ways the concept of the physician is that he is on a pedestal, and in view of this, he, like the clergyman, must act accordingly. His conduct must be exemplary in all ways, including reasonable fees, avoidance of fee splitting, and the like. While the true physician should conduct himself in such a manner that he will be looked up to and respected, he cannot be aloof and live along in an ivory tower. As a matter of fact, he will not gain the respect of his patients, in this modern day, unless he assumes his role as a business man. He should be an active citizen, participating not only in local, state, and national affairs, but also should be a leader in these activities because of the advantage of his education and experience.

The practice of medicine is a way of life as well as a way of making a living. If we adhere to these principles, our image will be satisfactory.

—JOSEPH A. LANE, M.D., President,
in NEW YORK STATE J. MED.,
May 15, 1963.

Frequent Problems in Practice To Be Aired at AMA '63 Meeting

The latest information on some of the most common problems that confront physicians will be presented at eight general scientific sessions during the annual meeting of the American Medical Association in Atlantic City, June 16-20.

A series of lectures on modern concepts of acute myocardial infarction, including basic physiological and pathological considerations, will be presented by Jesse E. Edwards, M.D., St. Paul, Minn.; Richard J. Bing, M.D., Detroit; Jack W. Crowell, Ph.D., Jackson, Miss.; Carleton B. Chapman, M.D.,

Dallas; Franklin D. Johnston, M.D., Ann Arbor, Mich., and Thomas N. James, M.D., Detroit.

A day-long symposium on strokes is scheduled on Wednesday, June 19. Participants include Louis Sokoloff, M.D., Bethesda, Md.; C. Miller Fisher, M.D., Boston; Clark H. Millikan, M.D., Rochester, Minn.; T. H. Newton, M.D., San Francisco; John Stirling Meyer, M.D., Detroit, and James E. Eckenhoff, M.D., Philadelphia. Others are Ellen McDevitt, M.D., New York City; Edwin J. Wylie, M.D., San Francisco; Donald A. Covalt, M.D., New York City; Roy R. Greening, M.D., Philadelphia; H. L. Baker, M.D., Rochester, Minn. and J. Lawrence Pool, M.D., New York City.

A full day's program will be devoted to a symposium on newer knowledge and therapy of peptic ulcer on Monday, June 17. The 11 speakers are David State, M.D., New York City; Eldon Foltz, M.D., Seattle; John Campbell, M.D., Indianapolis; James L. A. Roth, M.D., Philadelphia; Joseph B. Kirsner, M.D., Chicago; John Bruce, M.D., Edinburgh, Scotland; Edward R. Woodward, M.D., Gainesville, Fla.; H. William Scott, Jr., M.D., Nashville, Tenn.; Claude E. Welch, M.D., Boston; George A. Hallenbeck, M.D., Rochester, Minn. and Eugene Bernstein, M.D., Minneapolis.

A panel discussion on medical genetics will bring together David Y. Y. Hsia, M.D., Chicago; Harold F. Falls, M.D., Ann Arbor, Mich.; Maurice T. Fliegelman, M.D., Louisville; E. Burke Evans, M.D., Galveston, Texas, and David C. Fainer, M.D., Baltimore.

Various problems associated with the treatment of obesity will be explored by a six-man panel consisting of Edgar S. Gordon, M.D., Madison, Wis.; Eliot Stellar, Ph.D., Philadelphia; Albert Stunkard, M.D., Philadelphia; Charlotte M. Young, M.D., Ithaca, N. Y.; Garfield G. Duncan, M.D., Philadelphia and Seymour L. Halpern, M.D., New York City.

Participating in a symposium on venereal disease will be R. H. Kampmeier, M.D., Nashville, Tenn.; M. Brittain Moore, Jr., M.D., Atlanta; Sidney Olansky, M.D., Atlanta; Nicholas J. Fiumara, M.D., Boston; D. B. Stewart, M.D., Mona, Jamaica, B.W.I. and Kyril B. Conger, M.D., Philadelphia.

An analysis of the painful back will take the form of a panel discussion among H. Relton McCarroll, M.D., St. Louis; Allen S. Russek, M.D., New York City; Robert D. Moreton, M.D., Fort Worth, Texas, and Eben Alexander, M.D., Winston-Salem, N. C.

In the July issue of the JOURNAL, and subsequently whenever there are such proceedings to report, meetings of the IMS Executive Council will be summarized.

Deputy councilors are asked to watch for and to read these summaries carefully, so that they can make them the bases for their oral reports to their respective county medical societies.

President's Page



Members of the Iowa Medical Society can be certain that the wishes of physicians will be adequately presented to the MAA Advisory Council and the Board of Social Welfare, as the program for Medical Assistance to the Aged is formulated.

The medical profession has a representative on the MAA Advisory Council, and we are confident representatives of many of the other groups represented, will share our points of view concerning implementation of this program.

At a special meeting last week, the IMS Subcommittee on Public Assistance considered all aspects of the MAA program, and its findings are to be presented to the IMS Executive Council at a special meeting this week. Prior to a meeting of the MAA Advisory Council scheduled for June 5, the resultant suggestions from the Executive Council will be transmitted to the physician member of that group, and he will relay it to the other members of the Advisory Council.

Final recommendations regarding the content of the Kerr-Mills program for Iowa won't be presented without adequate consideration and approval by the appropriate policy-making body of the IMS, and a special meeting of the House of Delegates will be called, if necessary.

C. W. Edwards, Sr.

THE DOCTOR'S BUSINESS

Are You Expressing Your Opinions to the Right People?

HOWARD D. BAKER
Waterloo



Most of us feel that in today's busy and complex society, we fulfill our responsibility as citizens by voting, by paying our taxes and by expounding loudly at the country club on political issues. Those are not enough!

Though there is admittedly a lot of political maneuvering in Washington, and though a great deal of influence is wielded by various lobbying groups, plain old grass-roots sentiment—when voiced—is the single most influential factor in legislation. No sane senator or representative would ignore the wishes of his constituents. They are the people who elected him, and who are to decide whether or not he can continue in office.

With our very complex economic structure, many extremely important social and economic proposals are constantly being considered. No informed person can honestly claim not to have opinions on these issues. These opinions, no matter how strong, are wasted if not expressed to our lawmakers. Your colleagues on the hospital staff and the members of your Rotary Club do not cast their votes in the halls of Congress.

What are your sentiments on subsidies for farmers, foreign aid, tax reduction and revision, the present version of the Self-employed Persons' Retirement Act, medical aid for the aged, and the many other crucial issues facing us today? More important than "What are your feelings?" is the question "Who has been made aware of your feelings?" The impact of a substantial number of letters from his constituents will be far more influential on your Senator or Representative than even the most powerful lobby.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

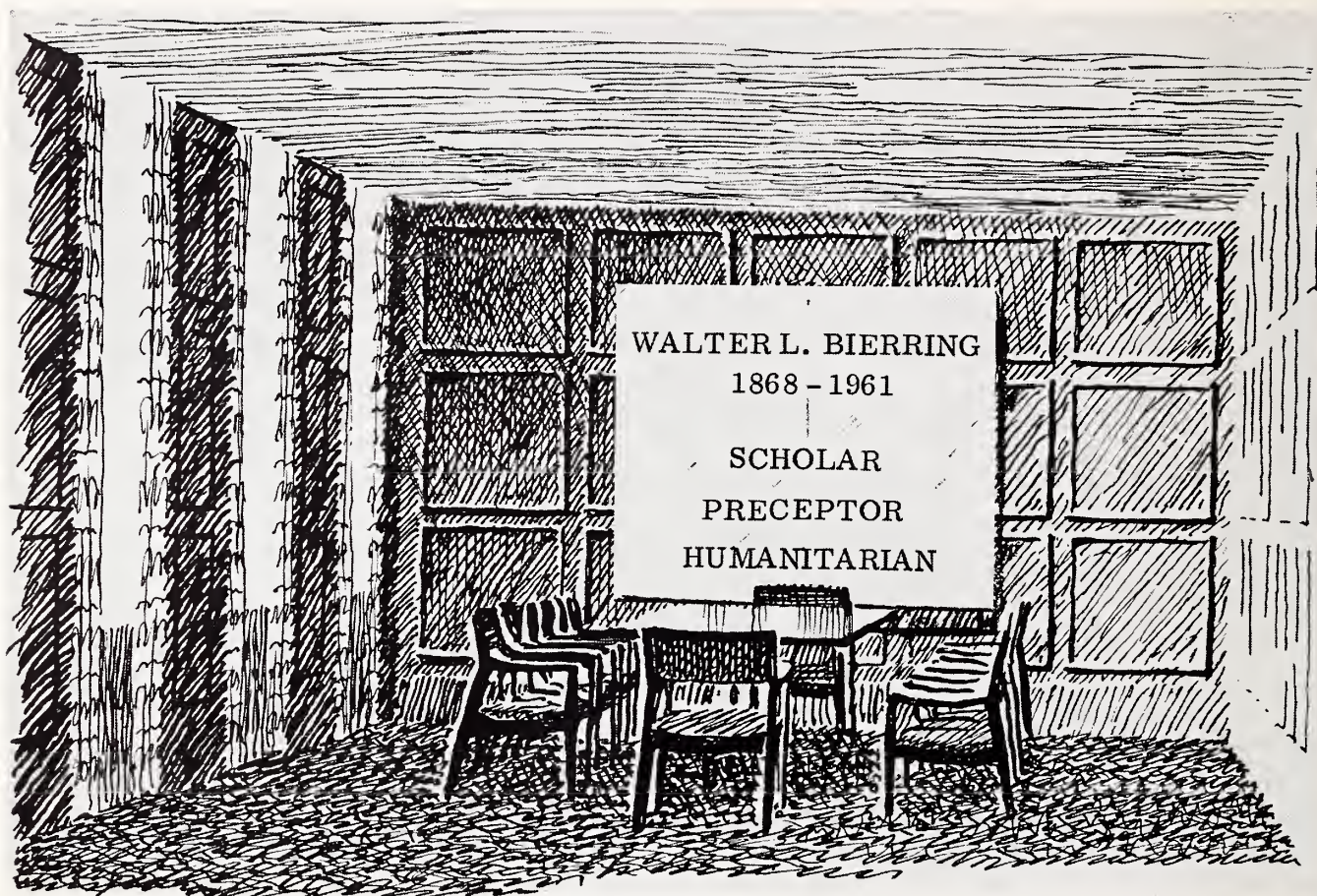
THE LAWMAKERS ARE ANXIOUS TO PLEASE YOU

This appeal might have been even more timely a couple of months ago, when letters to your state legislators would have enabled you to help shape the state laws that were enacted in Des Moines. But it is never too late! Every major act of the General Assembly, like every major act of Congress is a tissue of compromises. No individual lawmaker is completely satisfied with any of the principal measures he voted for on final passage. The chances are good that he will have an opportunity next time to propose or to support changes in the new laws or parts of laws that you consider faulty, and a letter from you will strengthen his determination to do so.

Don't be deterred by the fact that you and your Senator or Representative are of different political parties or that you voted for the man whom he defeated in the election. Actually, he may be even more interested in gaining your support than in gratifying those of his followers whose support it would be hard for him to lose.

On the other hand, don't hesitate to write to one of your lawmakers because he has done precisely as you wanted him to do, or because you know that his principles and attitudes exactly coincide with yours. If he has voted "right" send him a "thank you" letter. He'll be grateful for your note of appreciation, and his persistence will be reinforced to a degree far out of proportion to your importance as a voter.

This communication of your sentiments and desires is a *duty and responsibility*—not just a *right*. You should complain against political parties, against individual politicians and against specific legislation only if and after you have fulfilled this responsibility. It's as simple as picking up your Dictaphone and expressing your opinion—now!



Bierring Memorial

A committee formed to plan and raise funds to finance a fitting memorial to the late Walter L. Bierring, M.D., has received approval from the State Executive Council to remodel and refurnish the Conference Room of the State Department of Health, on the third floor of the State Office Building, in Des Moines, in the manner shown in the accompanying picture.

The project will involve paneling all walls in walnut, draping the windows from ceiling to floor, and carpeting the floor. The memorial plaque, in walnut and about six feet square, is to be placed on the north wall. An anteroom will be constructed to the south, and it also will be panelled in walnut.

It is estimated that the work will cost about \$20,000, and funds are being sought from the members of professional associations in which Dr. Bierring was interested, and from his many other colleagues and friends throughout the state and nation.

The chairman of the committee is D. C. Konzett, M.D., Dubuque, a member of the State Board of Health; Marie Tenner, R.N., Iowa City, director of nursing service at University Hospitals, is secre-

tary; and Mr. Donald L. Taylor, Des Moines, executive director of the Iowa Medical Society, is treasurer. Other members are: Mr. Louis Blair, Cedar Rapids, superintendent of St. Luke's Methodist Hospital; John Schwartz, Sr., D.O., Des Moines, chairman of the board of Des Moines General Hospital; Mr. B. F. Carter, Jr., Forest City, newspaper editor; Mrs. Jay C. Tone, Jr., Des Moines; F. W. Pillars, D.D.S., Des Moines; Mr. Elmer H. DenHerder, Sioux Center, a legislator; Mr. John Brooks, Des Moines, an architect; Mr. Paul E. Morgan, Ames, an ISU faculty member; Mr. William Wimer, Des Moines, an attorney; and Mr. Thomas Tibbs, Des Moines, director of the Des Moines Art Center.

Contributions to the fund are solicited. Checks should be made payable to "The Bierring Memorial Room," and sent to Mr. Taylor at 529 Thirty-sixth Street, Des Moines 12.

In a memorial article published in the September, 1961, JOURNAL OF THE IOWA MEDICAL SOCIETY, Lee Forrest Hill, M.D., of Des Moines said that history will acclaim Dr. Bierring as one of the nation's outstanding physicians of all time. Fol-

lowing are a few of Dr. Bierring's accomplishments that Dr. Hill mentioned.

During his senior year in medical school at the State University of Iowa, he was invited by the dean to undertake a two-year postgraduate tour of European medical centers, and upon its completion to become chairman and professor of the projected Department of Pathology and Bacteriology at Iowa City. Thus, from 1893 to 1913, he was an academician, the first seven of those years at S.U.I., and the final three at the Drake University Medical School, in Des Moines. In 1894 or 1895, he was the first to make diphtheria antitoxin west of New York City.

When the Drake Medical School was merged with the one at S.U.I., Dr. Bierring began his second career—a private practice as consultant in internal medicine. He served in this capacity from 1913 to 1933. His third career was as commissioner of health, and occupied another 20-year period, from 1933 to 1953, and he began it at the age of 65, when he might well have been thinking of the comforts of retirement. But even at the age of 85 he was not yet ready to retire, and in 1953 he accepted the post of director of the Division of Gerontology, Heart and Chronic Diseases, in the State Department of Health.

He served as president of the Johnson County Medical Society in 1902, of the Iowa Medical Society in 1908, of the Polk County Medical Society in 1911, and of the American Medical Association in 1933. In 1956, he was awarded the American Medical Association's Distinguished Service Medal.

He was secretary-treasurer of the Federation of State Licensing Boards of the United States and editor of the *FEDERATION BULLETIN* from its estab-

lishment in 1915 until his death. He assisted in the organization of the National Board of Medical Examiners in 1915 and 1916. He was the first chairman of the Board of Internal Medicine, and he also served as chairman of the American Board of Preventive Medicine and Public Health during nine consecutive terms. He was instrumental in the establishing of a Sub-Board of Aviation Medicine, and was national president of the honorary fraternity, Alpha Omega Alpha, from 1924 until 1960.

Dr. Bierring wrote almost innumerable medical articles and several books. A selected "Bierring Bibliography," published in the Bierring Festschrift issue of the *JOURNAL OF THE IOWA MEDICAL SOCIETY*, in August, 1957, lists 194 separate items.

It is unlikely that any other Iowa physician will match Dr. Bierring's record of service to the public and to the profession. Thus, he is supremely deserving of an appropriate and lasting memorial.

Civil Defense Officials to Discuss Disaster Care Program

Civil defense, biological and chemical warfare, and disaster planning will be the major topics at the 11th annual National Conference on Disaster Medical Care, June 15, at Atlantic City, N. J.

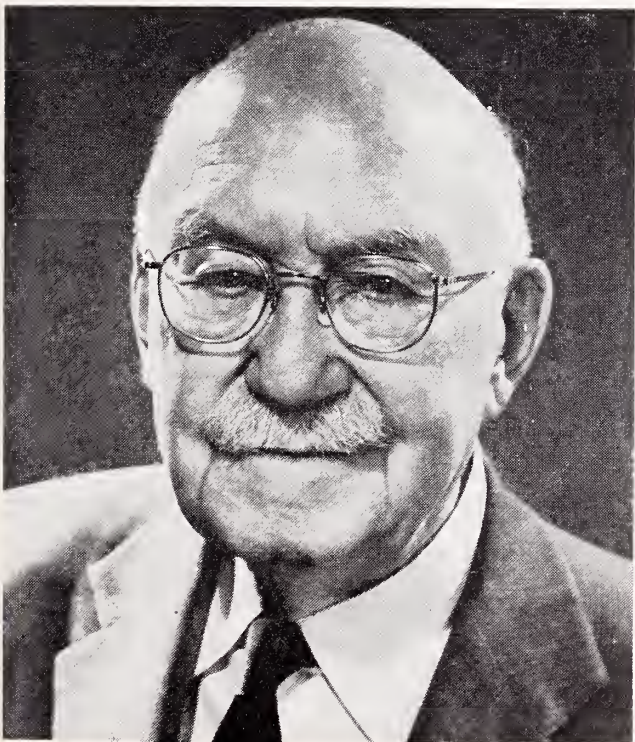
Sponsored by the American Medical Association's Council on National Security, the one-day conference will precede the opening of AMA's 112th annual meeting on Sunday, June 16.

The national civil defense program will be discussed by Stuart L. Pittman, assistant secretary of defense for civil defense. Medical aspects of civil defense will be outlined by Lt. Col. Louis J. Hackett, Jr., MC, medical coordinator in the Dept. of Defense's Office of Civil Defense.

Gabriel P. Ferrazzano, M.D., chief of the Public Health Service's Division of Health Mobilization, will report on progress in health mobilization programs of the PHS, and George W. Paschal, Jr., M.D., Raleigh, N. C., a member of AMA's Committee on Disaster Medical Care, will discuss "Physician Responsibility in Disaster Planning."

The 10-year history of Medical Educators for National Defense (MEND) will be outlined by James E. Fitzgerald, M.D., Washington, D. C., a member of the sponsoring Council. David W. Clare, M.D., Pittsburgh, Pa., will speak on "Community Disaster Planning and Effective Testing."

Conrad E. Ronneberg, Ph.D., chairman of the committee on civil defense of the American Chemical Society, will report on "Chemical and Biological Defenses in Perspective." Following his presentation, scientists from the Army Chemical Center will discuss both biological and chemical warfare, including such topics as classification, identification, methods of delivery, effects, immunization and treatment, and prevention and protection.



THE JOURNAL *Book Shelf*



BOOK REVIEWS

MEDICAL LABORATORY TECHNOLOGY, by *Matthews J. Lynch, M.D., Stanley S. Raphael, M.B., Leslie D. Mellor, Peter D. Spare, Peter Hills and Martin J. H. Inwood* (Philadelphia, W. B. Saunders Company, 1963. \$12.00).

This text is a new one, and the authors are pathologists and technologists associated with hospitals in Sudbury, Ontario, Canada. The preface states: "Our aim has been to give workers in our field a book that is up-to-date and covers the vast bulk of investigative demands encountered in the average general hospital, yet one which outlines not only the 'how' but also the 'why' of laboratory work."

Basic physics, general chemistry, physiologic chemistry, and physiology germane to laboratory determinations, as well as procedural details, are all included. The reviewer does not think the book superior to other standard texts having the same content and objectives, but histologic technics which usually are rather inadequately treated in general texts, have been given considerable space and have been well presented in this volume.

The quality of the illustrations varies from very, very good in the parasitology chapters, to poor in the hematology chapters. Black and white illustrations only, and a newspaper type of print have, I am sure, aided materially in keeping down the price of the book. These economies are laudable, no doubt, but they do make the pages less attractive than those of comparable texts, and do make the reader fatigued more rapidly.

One would judge this text to be of some value as a supplementary manual for students of medical technology because of the type of detail it contains, but physicians and experienced medical technologists would probably have little occasion to refer to it.—*David Baridon, Jr., M.D.*

MOVING INTO MANHOOD, by *W. W. Bauer, M.D.*, (Garden City, New York, Doubleday and Company, Inc., 1963. \$2.95).

This is another book, written for the adolescent, which stresses the ever-present need for educating youth on the complexities of adulthood—the responsibilities, the problems and the emotional reactions. The text is straightforward and in plain language. The physician will do well to keep this book in mind

when such reference material is needed for his adolescent male patient.—*M. E. Alberts, M.D.*

COUNSELING IN MEDICAL GENETICS, SECOND EDITION, by *Sheldon C. Reed, Ph.D.* (Philadelphia, W. B. Saunders Company, 1963. \$5.50).

The increased interest in medical genetics is reflected in the increasing numbers of books, monographs and treatises appearing in the medical literature. This book has been revised to keep up with the rapidly changing data available to the physician who is concerned, at least occasionally, with genetic problems.

The book is delightfully written and the physician is provided with the facts he needs when he must answer a family's questions regarding the chances of a repetition of genetic traits (desirable as well as undesirable). Many illustrative examples are cited to emphasize the practical aspects of the counseling.

The value of this work is greatly enhanced by a very extensive bibliography covering many of the very rare situations which are not discussed in the body of the book. Thus, since it will serve as a quick reference, without confusing the issue with a lot of deeply technical genetic data, this book well serves a useful place in the physician's office library.—*M. E. Alberts, M.D.*

BOOKS RECEIVED

THE CARE OF MINOR HAND INJURIES, SECOND EDITION, by *Adrian E. Flatt, M.D.* (St. Louis, The C. V. Mosby Company, 1963. \$10.50).

CLINICAL GASTROENTEROLOGY, SECOND EDITION, by *Eddy D. Palmer, M.D.* (New York, Hoeber Medical Division, Harper & Row, Publishers, 1963. \$22.50).

CURRENT PSYCHIATRIC THERAPIES, VOL. III, ed. by *Jules H. Masserman, M.D.* (New York, Grune & Stratton, Inc., 1963. \$9.75).

THE RISK TAKERS, by *Hugh McLeave*. (New York, Holt, Rinehart and Winston, Inc., 1963. \$4.50).

HANDBOOK OF PEDIATRICS, FIFTH EDITION, by *Henry K. Silver, M.D., C. Henry Kempe, M.D., and Henry B. Bruyn, M.D.* (Los Altos, California, Lange Medical Publications, 1963. \$4.00).

NEW AND NONOFFICIAL DRUGS, 1963, evaluated by the AMA Council on Drugs. (Philadelphia, J. B. Lippincott Company, 1963. \$).

MEDICINE AND THE STATE, by *Matthew J. Lynch, M.D., and Stanley S. Raphael, M.B.* (Springfield, Illinois, Charles C Thomas, 1963. \$9.75).

Link Between Arthritis and Weather

Dr. Joseph Lee Hollander, a Philadelphia rheumatologist, has reported that symptoms of arthritis patients became worse when barometric pressure was lowered and humidity was increased simultaneously under scientifically controlled conditions. "We believe that we have established, on a scientific basis, that the environment has a definite and measurable effect on arthritis," he said. "Weather effect' is not just another 'old wives' tale.'" Further knowledge of how weather affects this disease may ultimately lead to special air conditioning to provide the rheumatic patient a more comfortable life, he said.

In a report in the April 1963, ARCHIVES OF ENVIRONMENTAL HEALTH, Dr. Hollander described experiments conducted in a \$125,000 controlled climate chamber, dubbed the Climatron. The chamber is a room of reinforced concrete 15 feet square suitable for two persons to live in, Dr. Hollander said. It is entirely sealed and is accessible only through an air-lock vestibule equipped with submarine doors and pressure equalizing valves. A room under the chamber houses machinery for controlling temperature, humidity, rate of air flow, barometric pressure, and ionization, the number of ions (positive and negative charged particles) in the air.

In the first series of tests with arthritic volunteers, Dr. Hollander said, the five climatic factors were changed one at a time and the results were "conclusively negative." No single climatic factor induced the "weather effect."

In a second series of tests, a drop in barometric pressure was coupled with a rise in humidity because these are the prevailing factors in nature before any rainstorm, the time when most arthritics complain the most about their symptoms. "In seven of the eight rheumatoid arthritis patients, and three of the four osteoarthritic patients there was significant worsening of symptoms and objective measurements in 29 of 40 trials of this combination," he said. "The subjective symptoms increased within four hours of the start of the climate change, and the objective worsening was obvious within six to eight hours."

The patients recorded their own symptoms every day, Dr. Hollander explained, but in addition to these subjective reports a researcher examined each patient twice daily and made objective measurements of his condition. "If the humidity was kept constant for a day at the peak of 80 per cent and the barometric pressure at the low of 28.5 inches after the cycle of variation from the baseline level was achieved, the condition of the arthritis improved, demonstrating that it was the simultaneous change in the two factors and not the high humidity or low barometric pressure alone which aggravated the condition."

"This is not to say that other combinations may not induce similar or even greater effects, because

we have not yet tested the myriad of possible combinations of the five parameters of climate which we can control," Dr. Hollander said.

There have been reports that negative ionization in high concentration causes amelioration of symptoms of fatigue, stiffness, and pain. On the other hand, reports claim to show that positive ionization of the air increases the discomfort of the subjects. "It seems too simple that this one climatic factor can produce so many effects; further controlled studies are needed," he declared.

The Climatron project is proceeding with further experiments to determine which other weather combinations are detrimental to the patient with arthritis and other musculoskeletal diseases. Perhaps it may be possible to detect the one or two key climatic factors which must be kept constant for the benefit of the rheumatic patient, and special air conditioning for his home may give him a more comfortable life.

Most important are experiments attempting to determine what changes occur in the body in response to climate changes. Many of the rheumatic disorders seem to arise from a failure of the individual to maintain homeostasis, or a normal internal environment, when challenged by changes in his external environment which are inherent in life, he said. Although a vast number of studies have been made over the years purporting to show the effects of weather on man and on diseases, Dr. Hollander said, none has employed very accurate methods. Only one previous attempt at establishing a controlled climate chamber for such a study has been made, and it was designed to regulate only heat and humidity.

Dr. Hollander has studied joint diseases at the University of Pennsylvania for 17 years. He is professor of medicine, School of Medicine and Graduate School of Medicine.

W. B. SAUNDERS COMPANY features the following new editions in their full page advertisement appearing elsewhere in this issue:

**BEESON and McDERMOTT—CECIL-LOEB
TEXTBOOK OF MEDICINE**

The New (11th) Edition of a world-famous text, with contributions by 173 noted authorities and details of over 800 diseases

**ANDREWS and DOMONKOS—DISEASES OF
THE SKIN**

A thorough revision of a classic text offering sound advice in dermatologic diagnosis and treatment

**AEGERTER and KIRKPATRICK—ORTHOPE-
DIC DISEASES**

An up-to-the minute book to aid you in the accurate diagnosis of bone disease

Hearing Conservation

Speech-Reading and Auditory Training

In a program of speech-reading and auditory training, we are concerned with that segment of hearing-handicapped persons, either children or adults who still retain some measure of usable hearing, but first, have hearing deficits which can not be remedied by medical or surgical intervention, and second, have hearing deficits of sufficient magnitude to constitute a significant barrier to communication through speech. Our goals for a program of speech-reading and auditory training are (1) to help such persons learn to make maximal use of the hearing they have, and (2) to help them learn how to augment their limited auditory ability by making effective communicative use of other cues, especially visual ones, by means of which speech perception may be aided.

Speech-reading, or the more dated term *lip reading*, may be defined as the use of visual cues by which a hard-of-hearing or deafened individual can assist himself in comprehending oral language. Not only lip movements but facial expression, gestures, and contextual clues are employed by such a "listener" to gain information that will be helpful to him in understanding a speaker. In auditory training, the hard-of-hearing person is

reeducated to utilize all auditory clues, from gross sounds to speech sounds, so as better to comprehend speech. To be aware of, to discriminate among, and to utilize information provided by sounds are the key steps in auditory training. Actually these are also the steps taken in speech-reading; one looks, discriminates visual cues, particularly lip movements, and utilizes these cues in gleanings the "message." It is for this reason that we combine work in speech-reading and auditory training, for the hard-of-hearing individual naturally combines auditory and visual cues in his attempt to understand a speaker. It is this combination of auditory cues and speech-reading that results in greater understanding of speech than either speech-reading or limited audition.

There are established principles that the speaker should observe in such a situation. First, the speaker should face the speech-reader, at a distance of about three or four feet, with his (the speaker's) face clearly exposed by day or artificial light. Second, the speaker should enunciate his words clearly in a voice of moderate loudness. He should avoid exaggeration of lip movements because exaggerated movements are distorted and actually are more difficult to interpret. Third, if the speech-reader has difficulty in understanding, the speaker should repeat or re-word his thought until the hard-of-hearing person indicates understanding. Also, since the speech-reader must depend on context, the speaker should be careful to define the topic at the beginning of a discussion. Finally, the speaker should avoid distractions or facial distortions such as continuous smiling, head movements, distracting hand movements, and holding a pipe or cigar or cigarette in his mouth.

For the speech-reader or one wishing to learn speech-reading, there also are principles to be followed. First, it is unnecessary to perceive clearly every sound or word that is spoken; context will fill in many gaps if he concentrates on understanding a thought and does not become too concerned with individual syllables or words. Besides, only about one-third of all speech sounds are clearly visible. Second, many sounds and words are homophonous, i.e., they look alike when spoken. An example, of groups of such homophonous sounds are pear, mare, and bear; fine and vine; two and do; etc. The approach, then to good speech-reading is to think synthetically, not analytically. That is to say, one must learn to fill-in missing words, to

The Committee on the Conservation of Hearing for the State of Iowa, which is presenting a series of articles in the *JOURNAL*, consults with and advises all agencies interested in the problems of hearing impairment. Its services are available to industry, agriculture, education and to the broad spectrum of public health and welfare services within the state.

The Committee has been officially sponsored by the Iowa State Department of Health since 1957. It was first formed in 1949, under the leadership of Dr. D. M. Lierle, head of the Department of Otolaryngology and Maxillofacial Surgery at S.U.I. From the first, the Committee has been interdisciplinary in composition and purpose.

The Committee presently consists of: C. M. Kos, M.D. (chairman), otologist in private practice, Iowa City; Joseph Wolvek (executive secretary), consultant, Hearing Conservation Services, State Department of Public Instruction, Des Moines; M. G. Barillas, assistant director for Special Services Division of Vocational Rehabilitation, Des Moines, Iowa; L. E. Berg, superintendent, Iowa School for the Deaf, Council Bluffs; Dale S. Bingham, consultant, Speech Therapy Services, State Department of Public Instruction, Des Moines; Paul Chestnut, M.D., private practitioner and member of AAGP, Winterset; James F. Curtis, Ph.D., head, Department of Speech Pathology and Audiology, S.U.I., Iowa City; Madeline M. Donnelly, M.D., director, Division of Maternal and Child Health, State Department of Health, Des Moines; Joseph Giangreco, assistant superintendent, Iowa School for the Deaf, Council Bluffs; Malcolm Hast, Ph.D., Department of Speech Pathology and Audiology, S.U.I., Iowa City; Byron Merkel, M.D., otolaryngologist in private practice and member of Academy of Otolaryngology and Ophthalmology, Des Moines; William Prather, Ph.D., Department of Speech Pathology and Audiology, S.U.I., Iowa City; Mrs. Jeanne Smith, Department of Otolaryngology and Maxillofacial Surgery, S.U.I., Iowa City; Edmund Zimmerer, M.D., commissioner, State Department of Health, Des Moines.

derive meaning from the topic and the context of the sentence, to pick up cues from the rhythm, accent, and stress of a sentence, and finally, to do a little intelligent guessing. For a speech-reader to be analytical—to try to account for every sound or word group—is disastrous. Third, a hard-of-hearing person must continually practice speech-reading not only as he would any new skill, but also as he would a skill which he wishes to maintain at an optimal level.

It should be pointed out that in working with a hard-of-hearing child, one teaches speech-reading indirectly. The child is constantly reminded and made aware of the speaker's face, but no formal exercises and principles are developed for him.

The latter approach is particularly essential in developing a program of auditory training. At the beginning, even with an adult, the emphasis is training the pupil to "listen." A child who has never heard normally must learn to become aware of many sounds, for the most part gross sounds, in his environment; these are sounds he may or may not have been conscious of all his life. For the child, many of these sounds will be new and will have meaning for the first time. For the adult who has been gradually or suddenly deprived of his auditory environment, awareness and discrimination of sounds must be relearned. Either an auditory training unit (table model) or a hearing-aid will be used. Whichever device is employed as a means of amplifying sounds for the hard-of-hearing individual, these devices amplify sound artificially. It is for this reason that a hard-of-hearing person must learn to interpret or re-interpret his auditory world, and through artificial amplification.

After gross sound (a door slamming, books or dishes falling on the floor) are understood, we proceed to finer sounds (person walking versus person running, etc.) and finally to speech sounds. Here, the individual learns to discriminate and interpret the subtle characteristics of consonants and vowels which could mean the difference between understanding and misinterpretation. At this point, the program of auditory training is incorporated with speech-reading exercises. The combination of auditory training and speech-reading will enable the hard-of-hearing individual to discriminate better, interpret, and give meaning to another's speech; this is our primary rehabilitative goal.

REFERENCES

1. Canfield, N.: *Hearing: A Handbook for Laymen*. New York, Doubleday & Co., 1959.
2. Davis, H., and Silverman, S. R.: *Hearing and Deafness*, Revised Edition. New York, Holt, Rinehart and Winston, 1960.

SOURCES OF INFORMATION

1. American Hearing Society, 919—18th Street, N.W., Washington 6, D. C.
2. American Speech and Hearing Association, 1001 Connecticut Avenue, N.W., Washington 6, D. C.

Slower Fingernail Growth
Sign of Aging

The rate of growth of fingernails varies between men and women and from family to family but appears to slow down with age, according to Dr. William B. Bean, of the State University of Iowa.

Dr. Bean made a 20-year study of the growth pattern of his left thumbnail and found at the end of that time it was taking nearly a month longer for the nail to grow from the cuticle to the fingertip than it had at the start of his study. A sharp decline in the growth rate began at age 49 and seems to be continuing, he said, in an article in the April ARCHIVES OF INTERNAL MEDICINE. From 1942, when he was 32, until 1958, when he was 48, the nail took from 117 to 126 days to grow out, Dr. Bean said. But in 1959, it took 133 days; in 1960, 136 days; and in 1961, 138 days.

The nail was scored with a file at the cuticle on the first day of each month and photographed at intervals by a standardized technique in order to measure its growth, he explained.

There were some unaccountable spurts and lags in growth over the years, he said, but they were not associated with the seasons of the year or variations in climate. However, he said, other studies have shown a reduced rate of nail growth in persons who moved from the temperate to the arctic zone.

Commenting on various studies on fingernail growth, Dr. Bean said a generalization which holds for all groups which have been studied intensively indicates that there is a slight but significant difference between the rate of nail growth in the sexes, a tendency for a faster rate being found among men.

Familial tendencies in growth rates also have been found, with some families having a relatively fast rate and others a relatively slow rate, he said.

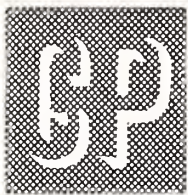
Sporadic observations indicate that increased metabolism is associated with an increased rate of nail growth, he said. This is seen in pregnancy where the rate of growth may be increased by as much as one-third. There is also clear evidence that starvation is associated with conspicuous reduction in the rate of growth, he said.

Mid-West Allergy Forum

The Annual Meeting of The Mid-West Allergy Forum will be held at The Sheraton-Cleveland Hotel, Public Square, Cleveland, Ohio, October 12 and 13, 1963.

The one and one-half days of scientific sessions will include panels on chronic pulmonary problems, cutaneous diseases, repository methods of therapy, and many other problems of clinical allergy.

For further information write to: I. M. Hinnant, M.D., General Chairman, 10465 Carnegie Avenue, Cleveland 6, Ohio.



Iowa Chapter of the American Academy of General Practice

Spring Postgraduate Conference

The Iowa Chapter of the American Academy of General Practice will hold its fourth annual Spring Postgraduate Conference at the New Inn, Lake Okoboji on June 13, 14, 15, 1963. The past three annual conferences have utilized the pattern of morning lectures and afternoon relaxation. This combination of study and play has been well attended and thoroughly enjoyed.

This year's program will follow the same pattern, though it will be one day shorter than the conference held in June, 1962. The Convention Hall at the New Inn provides a very nice site for the scientific lectures. The excellent accommodations at the New Inn, as well as the many other attractions of the area, make it an ideal place for the doctor and his family to relax and enjoy themselves. The swimming pool at the New Inn has been a popular spot for both youngsters and adults. Fishing and boating have been popular. The miniature golf course has helped entertain not only the children, but also the grownups, and the driving range and golf course have provided outlets for their pent-up energy.

The program on the 13th will be presented by the Northwestern Heart Council of the Iowa Heart Association, and our Education Committee has worked out a schedule that is sure to be of interest to the general practitioner for the 14th and 15th. The complete program follows:

Thursday, June 13

(HEART DAY)

(Sponsored by the Northwestern Heart Council
of the Iowa Heart Association and the
Iowa State Department of Health)

"Closure of Ventricular Septal Defects and Long-term Follow Up"—Morris Levy, M.D., Minneapolis

"Medical and Surgical Cardiac Emergencies in the Newborn"—Paul Adams, M.D., Minneapolis

"Mitral and Aortic Valvular Disease and Prosthetic Replacements"—Dr. Levy

"Relationship of Mump's Skin Test to Endocardial Fibroelastosis"—Dr. Adams

Friday, June 14

"Endocrine Therapy in Obstetrics & Gynecology"—David N. Danforth, M.D., Evanston, Ill.

"Anemias of Pregnancy"—Roy G. Holly, M.D., Lincoln, Nebr.

"Respiratory Problems of the Newborn"—M. E. Alberts, M.D., Des Moines

"Diagnosis and Management of Single Nerve Lesions"—Donald W. Mulder, M.D., Rochester, Minn.

"Athletic Injuries"—Carroll B. Larson, M.D., Iowa City

"Respiratory Allergic Disease"—Lawrence J. Halpin, M.D., Cedar Rapids

Saturday, June 15

"Abnormal Bleeding Problems"—Dr. Holly

"Management of Abortion"—Dr. Danforth

"Recurring and Chronic Respiratory Problems in Children"—Dr. Alberts

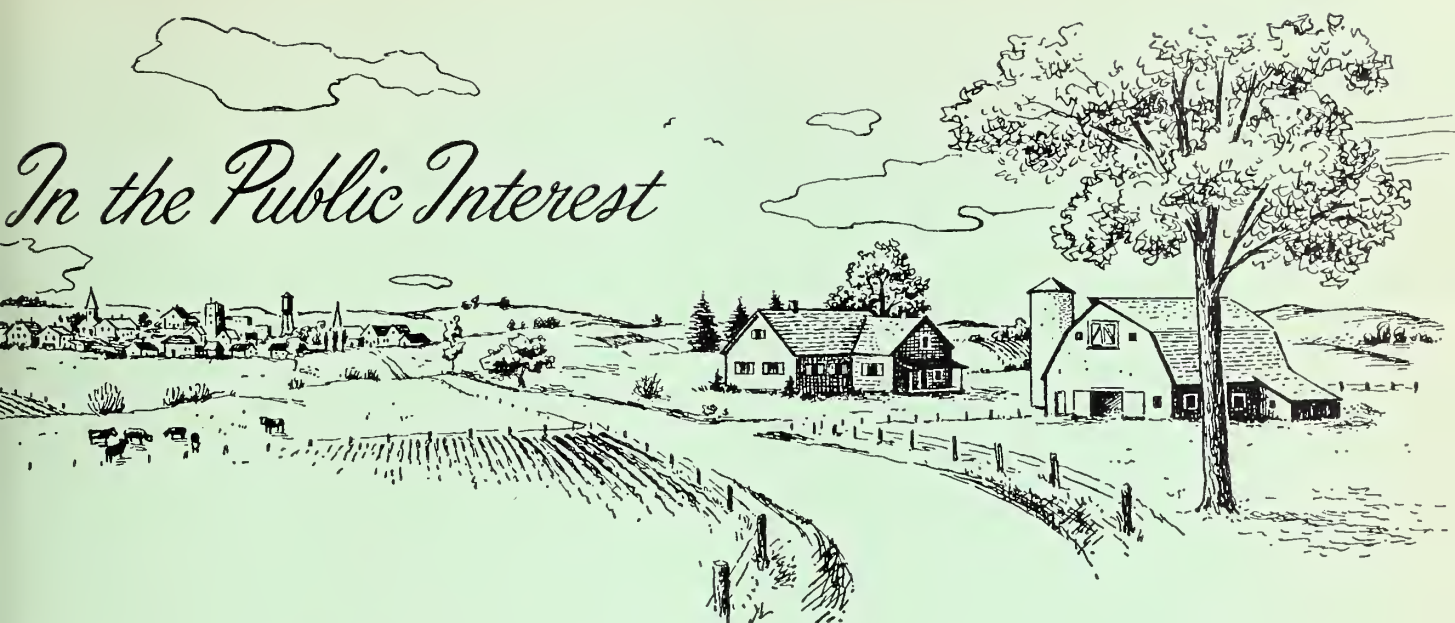
"Diagnosis and Treatment of Epilepsies"—Dr. Mulder

"Dermatologic Aspects of Allergies"—Dr. Halpin

"Whiplash Injuries"—Dr. Larson

The presentations on Friday and Saturday are made possible by a grant-in-aid from the Merck Sharp & Dohme Postgraduate Program and the Eli Lilly & Company Educational Seminar Program.

Remember the dates of the Annual Scientific meeting of the Iowa Chapter—September 16, 17, 1963, Hotel Savery, Des Moines, Iowa.



In the Public Interest

The 1963 General Assembly of Iowa Enacted Well-Designed Health Legislation

The Sixtieth General Assembly of Iowa, which adjourned two weeks ago, enacted virtually all of the measures in which Iowa doctors were professionally interested, in forms that the Legislative Committee of the Iowa Medical Society considers acceptable. We are certain that the new laws will greatly benefit the people of the state.

MEDICAL AID FOR THE AGED

The Legislature appropriated \$1,680,000 per year for the next two years to finance a Kerr-Mills program that will help near-needy people beyond 65 years of age to finance necessary attention for their ailments—attention that might otherwise impoverish them. Moreover, it authorized the Interim Committee to release up to \$320,000 more money for that purpose, if the original appropriation is exhausted.

At the suggestion of the IMS and other health groups, the Legislature made it mandatory that a private insurance company or other independent organization be employed to administer the program, at least for the first two years, so that MAA can be kept altogether separate from the Old Age Assistance set-up, so that accurate figures can be compiled on the numbers of eligible persons and the extents of their needs, and so that the way is kept open for the substitution of a plan under which the state can help such people buy health and accident insurance policies, beginning perhaps in 1965. Coverages for large numbers of such sub-standard risks aren't yet available in this part of the country, and they won't be until statistics have been gathered and actuarially-sound rates computed. The IMS and apparently a great majority of the legislators are convinced that subsidized health in-

surance promises the best method for preserving the dignity of the people whom MAA is designed to help.

Together with federal matching funds, the sum voted by the General Assembly will provide about \$4,000,000 for this purpose each year. The services that are to be provided the eligible elderly, wholly or in part at government expense, will be decided by the State Board of Social Welfare on the advice of the MAA Advisory Council, which is made up largely of representatives of health professions and institutions. The doctors of medicine hope that the program will be of the type known as "major medical"—one that will help pay the big bills, rather than cover multitudes of little ones.

COMPOSITE LICENSURE BOARD

Hereafter, licenses to practice in Iowa are to be granted to both doctors of medicine and doctors of osteopathic medicine and surgery by a single licensing board. The new law neither adds to nor detracts from the practice rights currently enjoyed by osteopathic physicians, as distinguished from osteopathic physicians and surgeons, except that henceforth they are authorized to prescribe drugs. No new osteopathic physicians' licenses will be issued, however, except by reciprocity to persons who were so licensed in other states prior to the effective date of this act and who have chosen to move to Iowa.

Future graduates of colleges of osteopathic medicine and surgery cannot be licensed as osteopathic physicians, but will be eligible for licensure as osteopathic physicians and surgeons after passing the same examination that is given to the graduates of medical schools, and after serving an ap-

proved one-year internship. Anyone now holding a license as an osteopathic physician can qualify for an unlimited license as an O.P.&S., if he wishes, either by taking a year of additional class work and a year of internship, or by taking two additional years of formal training, as many such men have done in the recent past.

The law provides that both osteopathic schools and osteopathic internships now approved by the American Osteopathic Association are to stand provisionally approved by the new board until 1968, unless a majority of board members, including the osteopathic ones, vote disapproval. The board has the authority to revoke or suspend the license of a doctor of medicine, an osteopathic physician and surgeon or an osteopath who, after notice and hearing, has been found guilty of "unprofessional conduct" as defined in the Code of Iowa, though any such decision is subject to review in the courts.

The law differs from the proposal originally agreed upon by the members of the M.D./D.O. Liaison Committee in only two particulars: (1) The composite board is to consist of six M.D.'s and two osteopathic physicians and surgeons, rather than five and one. This change doesn't appreciably affect the ratio. (2) The right to prescribe drugs is granted to osteopathic physicians, but this provision does no more than recognize a *fait accompli*.

OTHER MEASURES ADOPTED

Implied Consent. One of the amendments that the House added to the liquor bill, and which the Senate accepted, authorizes policemen to order sobriety tests for persons whom they suspect of having operated motor vehicles while intoxicated. Specifically, it legalizes the assumption that by applying for and/or using drivers' licenses, citizens have granted permission for such tests whenever the police choose to have them performed.

This portion of the liquor control act will be administered by the State Department of Public Safety, and the statute provides that "only a licensed physician, or a medical technologist or registered nurse designated by a licensed physician as his representative, acting at the written request of a peace officer may withdraw such body substances for the purpose of determining the alcoholic content of the person's blood."

The Blood Bill. Senate File 443, as enacted, prevents any insurance company authorized to do business in Iowa from furnishing whole human blood or blood products, or from replacing them in kind.

Confidentiality of Medical Studies. Under this act, hospitals may release records for use in research studies, and neither the materials so released nor any conclusions based upon them are to be admissible as evidence in court.

Nurses' Practice Act. The nurses abandoned their original proposal, which called for the establishment of a separate nurses' practice act. Instead, they asked for and were granted some relatively

small changes in the previously existing law. The principal one of these provides for the licensure, rather than merely for the registration, of nurses, thus enabling the nurses' board to exercise somewhat greater control over members of the nursing profession in Iowa.

Workmen's Compensation. The Legislature increased benefits payable by employers to or for the care of employees injured at work or afflicted with occupational diseases. It spent considerable time debating an amendment which would have granted the sick or injured employee the privilege of choosing his physician, but the proposal was defeated and the law will continue to provide that the employer "shall furnish" medical and surgical care in such cases.

Itinerant Licenses. The issuance of licenses for the practice of any health profession in numerous places is to cease, but present licensees were authorized to continue their patterns of practice.

Salaries. The IMS favored raises for the state commissioner of health and the state medical librarian. Both were granted increases in the departmental appropriation bill that was adopted at the close of the session.

BILLS NOT ACTED UPON

Radiation Control. This proposal by the State Department of Health would have permitted a federal agency to make sure that radiologists, x-ray technicians and other people who handle radioactive substances in Iowa are exposed to no more than safe amounts of radiation. The IMS approved of the measure, but didn't actively sponsor it. The bill failed to reach the House floor, and didn't get out of committee in the Senate.

Licensure of Physical Therapists. This proposal failed to reach the calendar in either house. The IMS has taken the position that therapists and technicians can raise their standards of training and practice by other means than by seeking the passage of licensure laws.

Bait Advertising. A bill designed to restrict the types of advertising permissible to vendors of corrective eyeglasses and their components, and related services, was revised to a form acceptable to the Iowa Medical Society. The House passed it, but it never reached the floor of the Senate.

CONCLUSION

Rather than heeding the critics who are disappointed that the legislators were unwilling to enact their proposals instantaneously, physicians and other thoughtful citizens fully recognize the necessity for careful study of all bills by committees in both houses. Iowa is fortunate in that its lawmakers, without exception, have been intent upon serving the best interests of the state. In the session that just closed, they worked hard and long, foregoing income that in most instances would have far exceeded their *per diem* as legislators. Most importantly, their accomplishments this year have been outstanding ones.

Iowa Association of Medical Assistants

New IAMA President



Mrs. Marjorie Snyder

The annual meeting of the Iowa Association of Medical Assistants was held at the Burlington Hotel, Burlington, with members of the Des Moines County Medical Assistants serving as hostesses. In addition to meetings of the Executive Council and House of Delegates there were excellent forums and speakers for the general session on May 4, and the luncheon meeting on May 5.

Newly elected officers were installed Sunday morning at the conclusion of the meeting of the House of Delegates. Our president for 1963-64 is Mrs. Marjorie Snyder, of Anamosa. Mrs. Snyder is a graduate of the Northwest Institute of Medical Technology. She has worked as laboratory technician in Mercy Hospital, in Des Moines, and as laboratory and x-ray technician in Dodge City, Kansas, before assuming her present employment with Drs. Paul, Brown and Bailey in Anamosa, a position she has occupied for nine years. Mrs. Snyder has served the Linn County Association of Medical Assistants as vice-president and president, and for the IAMA she has been corresponding secretary, editor of the annual *BULLETIN*, and convention program chairman. She is married, and has three children.

The president-elect, Mrs. Gladys Knight, is a

member of the Blackhawk Association of Medical Assistants. She is a high school graduate with general business training. For the past four years she has been employed as secretary to Dr. C. W. Seibert, in Waterloo. Previously, she served for four years as secretary-assistant for an eye, ear, nose and throat specialist in Omaha, Nebraska; one year as secretary-bookkeeper for an Omaha collection agency; two years as assistant bookkeeper at Doctors' Hospital, in Omaha; and 9 months as secretary for Drs. Entz and Kruse, in Waterloo. Mrs. Knight is married and has a teenaged son. She has served her local chapter as vice-president and treasurer, and as budget and finance chairman. She was appointed corresponding secretary of IAMA for 1961, and served as 1962 convention treasurer.

Mrs. Lucille Holmes, of Des Moines, our new vice-president, has served the Des Moines Chapter as secretary, program and *BULLETIN* chairman, and for several years has served IAMA as state pin chairman. Mrs. Holmes has been employed by Drs. Latchem and Burke in Des Moines for about nine years. Prior to that she was employed by Drs. Tom B. and Tom D. Throckmorton and Dr. George Watters. She was a student at Drake University for two years. In addition to our Association activities, she is active in P.T.A.

The recording secretary, Mrs. Mildred Bailey, of Grinnell, is married and the mother of two children. She is a graduate of Grinnell High school and has been employed as a medical assistant in the office of Dr. T. E. Brobyn, in Grinnell, for 12 years. She is active in the Methodist Church, Eastern Star, American Legion Auxiliary and T.T.T., as well as serving on the Campfire Girls Board. She is a charter member of the Jasper-Poweshiek Association of Medical Assistants serving as its vice-president and president, and on all committees. She has also been a member of the IAMA Education Committee, Civil Defense Committee, and Budget and Finance Committee.

Mrs. Wilma Mathis, treasurer, is a member of the Mason City Association. She was vice-president of that chapter for two years and is now president, and she has served as nominations chairman for IAMA. Mrs. Mathis is secretary-receptionist for Dr. A. J. R. Stueland, of Mason City, a position she has held for the past six years.

Re-appointed as historian was Mrs. Grace Brock, of Panora. Mrs. Brock has been employed for several years by Drs. Nicoll and Peterson, of Panora, and is a member of the Des Moines Medical Assistants chapter.

—HELEN G. HUGHES

STATE DEPARTMENT OF HEALTH

Edmund G. Zimmerman
COMMISSIONER

Morbidity Report for Month of April 1963

Diseases	1963 Apr.	1963 Mar.	1962 Apr.	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	240	522	348	Hancock, Jefferson, Johnson, Polk
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	879	1231	2855	Dubuque, Muscatine, Polk, Clay, Howard, Polk, Pottawattamie, Scott, Wapello
Whooping cough	4	6	2	Iowa
Brucellosis	17	18	9	
Chickenpox	738	938	278	Dubuque, Scott Pottawattamie, Scott
Meningococcic meningitis	1	1	3	Palo Alto
Mumps	323	434	359	Buena Vista, Polk, Pottawattamie, Scott, Woodbury
Poliomyelitis	0	0	0	
Infectious hepatitis	30	29	84	Black Hawk, Polk, Scott, Woodbury
Rabies in animals	38	29	40	Clinton, Dubuque, Jefferson, Keokuk, Lee, Palo Alto
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	23	43	25	For the state
Syphilis	55	86	66	For the state
Gonorrhea	86	101	97	For the state
Histoplasmosis	0	1	3	
Food intoxication	0	3	0	
Meningitis (type unspecified)	2	3	0	Clinton, Polk
Diphtheria carrier	0	0	0	
Aseptic meningitis	1	0	0	Bremer
Salmonellosis	5	3	6	Taylor
Tetanus	0	0	0	
Chancroid	0	0	0	
Encephalitis (type unspecified)	0	1	0	
H. Influenzal meningitis	0	1	0	
Amebiasis	0	4	3	
Shigellosis	3	0	0	Pottawattamie
Influenza	126	843	0	Lee

A Look at Des Moines and Polk County Communicable Disease Problems About Fifty Years Ago

(These items of special interest in communicable disease control are taken from the Des Moines-Polk County Department of Public Health Annual Report of 1962. This report entitled, "50 Years of Progress," compares health problems of earlier years with those of the present.)

The report for the fiscal year 1917 shows:

"308 cases were quarantined; 137 diphtheria; 114 scarlet fever; 33 cases of smallpox; and, 15 cases of poliomyelitis. 1,947 rooms were fumigated. 4,560 loads of night soil were conveyed to the dump.

"13 dairies were pasteurizing their milk as compared with 5 the previous year. A total of 42 dairies were selling milk in the city. The average bacterial count was 256,500. There were 628 producers furnishing the city's milk supply and the total daily milk consumption amounted to 20,000 gallons." (This compares with 70,000 gallons today with 734 Grade 'A' producers in 44 central Iowa counties.)

Inventory of the City Health Office included the following:

- 1 Maxwell automobile \$650
- 1 three-story brick building used for smallpox cases
- 1 two-story frame building used for scarlet fever and diphtheria cases

Some causes of death listed for 1916:

- | | | | |
|------------------------------------|-----|--------------------------------|----|
| 1. Organic diseases of heart | 147 | 11. Measles | 13 |
| 2. Cancer | 118 | 12. Automobile accidents | 12 |
| 3. Tuberculosis | 87 | Whooping cough .. | 12 |
| 4. Cerebral hemorrhage | 86 | 13. Diphtheria & croup | 10 |
| 5. Pneumonia | 81 | 14. Acute endocarditis | 9 |
| 6. Appendicitis | 25 | 15. Scarlet fever | 8 |
| 7. Influenza | 24 | 16. Angina pectoris ... | 5 |
| 8. Bronchopneumonia | 22 | Traumatism by mines | 5 |
| 9. Puerperal septicemia | 19 | Typhoid fever | 5 |
| Diseases of arteries | 19 | 17. Venereal diseases | 4 |
| 10. Embolism & thrombosis | 14 | 18. Motorcycle accidents | 3 |
| R. R. Accidents ... | 14 | 19. Street car accidents | 2 |
| | | 20. Rabies | 1 |

(In contrast with the above leading causes of

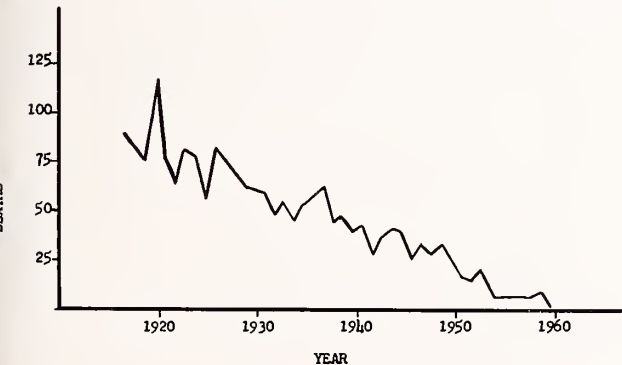
death in Polk County for the year 1916, are the leading causes of death for 1962:)

1. Heart disease ...	852	8. Cirrhosis of liver .	30
2. Malignancies	366	9. Suicide	22
3. Cerebral vascular		10. Diabetes mellitus .	21
lesions	316	11. Auto accidents ...	20
4. Infancy & congen-		12. Hypertension	17
ital	113	13. Nephritis &	
5. Accidents other		Nephrosis	7
than motor	85	14. Infections	4
6. Influenza &		15. Tuberculosis	1
pneumonia	66	All other causes .	269
7. Arteriosclerosis ..	60	TOTAL	2249

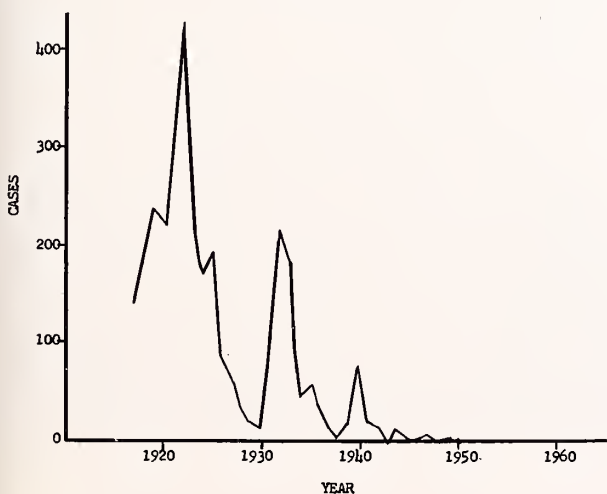
“Diphtheria was quite common in Des Moines prior to 1940, with as many as 200 cases occurring annually. Stop-gap measures of quarantine and vaccination were carried out during the epidemics, but the real eradication of these diseases occurred only because of continuing programs directed toward getting susceptible persons immunized, *even when there was no epidemic!* The ‘routine’ programs of the health department directed toward maintaining this high level of immunity in the population continue.”

* * * * *

Tuberculosis Deaths, Des Moines-Polk County, Iowa
1917-1962



Diphtheria Cases, Des Moines-Polk County, Iowa
1917-1962



Summary of Rabies Examinations

STATE HYGIENIC LABORATORY 1938-1961 AND
IOWA VETERINARY MEDICAL DIAGNOSTIC
LABORATORY 1951-1961

Species	Total Examined	Negative	Positive	
			No.	Per Cent
Coyote	1	0	1	100.0
Skunk	1,552	265	1,287	82.9
Civet Cat	71	23	48	67.6
Horse	93	39	54	58.0
Cow	1,724	986	738	42.8
Goat	6	4	2	33.3
Hog	170	118	52	30.5
Fox	200	146	54	27.0
Unknown	4	3	1	25.0
Dog	3,611	2,973	638	17.6
Deer	6	5	1	16.6
Sheep	50	43	7	14.0
Monkey	8	7	1	12.5
Badger	9	8	1	11.1
Cat	3,462	3,122	340	9.8
Raccoon	482	458	24	4.9
Bat	177	173	4	2.2
Mink	45	44	1	2.2
Mole	54	53	1	1.8
Ground Hog	78	77	1	1.2
Squirrel	1,542	1,522	20	1.2
Gopher	121	120	1	0.8
Muskrat	194	193	1	0.5
Rat	399	397	2	0.5
Rabbit	441	439	2	0.4
Beaver	3	3	—	0.0
Bird	3	3	—	0.0
Chinchilla	2	2	—	0.0
Chipmunk	33	33	—	0.0
Ferret	1	1	—	0.0
Ground Squirrel	143	143	—	0.0
Guinea Pig	22	22	—	0.0
Hamster	183	183	—	0.0
Hawk	1	1	—	0.0
Man	2	2	—	0.0
Mouse	366	366	—	0.0
Mule	2	2	—	0.0
Opossum	83	83	—	0.0
Owl	4	4	—	0.0
Rodent	1	1	—	0.0
Shrew	2	2	—	0.0
Snake	1	1	—	0.0
Vole	3	3	—	0.0
Weasel	10	10	—	0.0
Wolf	1	1	—	0.0
TOTAL	15,366	12,084	3,282	21.3

When determining the probable likelihood of exposure to rabies, it sometimes seems desirable to know the reported incidence of rabies in a certain animal species. This summary has been prepared primarily for this purpose. (Data source: I. H. Borts, M.D., director, State Hygienic Laboratory, Iowa City and P. C. Bennett, D.V.M., director, Iowa Veterinary Medical Diagnostic Laboratory, Ames.)



Woman's Auxiliary News



The Challenge of Our Rural Health Program in 1963-1964

Our year in Rural Health has been a combination of successes and failures. To avoid repetition for those of you who may have heard my report at our recent convention, may I refer you to my Rural Health report, pages 28, 29 and 30 of the Annual Reports Book.

It has been disappointing to find that our services still have not been used by farm groups as much as we would like. There may be two reasons for this: (1) A breakdown of rapport at the county level and (2) The very active program of our counterpart, the Rural Health Committee of the Iowa Medical Society. It, of course, was first in the field and has built good working relationships with rural groups. It is our hope that we can work more closely with this committee this year.

As regards some of our Auxiliaries' apathy toward Rural Health, I feel that it may stem partly from a feeling that rural organizations have such good programs of their own that little is left for us to do. It would be self-defeating to overlap or duplicate their efforts. However, if there is a vacuum anywhere in their health information needs, I am convinced that we can be of real service with all the program materials we have available in our Auxiliary.

A striking example of the need for us to be always ready and "on the scene" in the field of health education in Iowa can be cited here. For several years, the 4-H organization's main health project has been the yearly physical examination for its members. Last year the Chiropractic Association asked if its members could be allowed to do these examinations and also be permitted to conduct health education programs on posture. Our Medical Society's Rural Health Committee learned of this and offered to prepare a pilot film on Posture that could be used by the Extension Service in its 4-H programs or by any other group asking to use it. It has been prepared by the State University's Medical School, under the direction of Doctor Carroll Larsen, orthopedic surgeon of national reputation. The project has been received so enthusiastically that the Extension Service even offered to underwrite part of the expense of the project when it became obvious that the filming would cost more than originally planned. This is a dramatic example of what good working relationships . . . once established . . . can do. It is in

the field of health education that we are best equipped to work, and let us see to it that we are *there* with offers of help when the need arises. The group which offered its assistance is a very aggressive, eager one, well supplied with teaching materials and most anxious to get its "foot in the door" whenever it can find an opening. Shall our Auxiliaries continue to be apathetic, or can we begin to see where our responsibility lies and be ready really to get to work in 1963-1964?

The time for action is NOW! I should like to request that all county presidents *immediately* appoint their Rural Health chairmen for the coming year. As all program planning seems to be done in the spring, *now* is the time to contact three people at the county level with your offer of help in any health education program they may be planning: (1) The Farm Bureau Women's president or chairman, (2) The County Extension Director of the Women's program—(her office is usually in the County Court House), (3) The head of the girls' 4-H program in your county. (Your extension director will probably know her name.)

Mental Health projects have been stressed recently in rural organizations but because of the impact of the recent National Rural Safety Conference, I am looking for more emphasis on safety.

Whatever the health area may be, let's not find 1963-1964 a repetition of last year when far too many of you reported that there were no health problems in your county or none that you knew of. There *are* health problems in Iowa and if you begin to work with rural groups, you will begin to see what they are. Working together in the field of health education, we can make a real contribution toward the goal of better health and safety for farm families of Iowa in the coming year.

AM I MY BROTHER'S KEEPER?

(The National Rural Safety Conference
Chicago, April 5-6, 1963)

I felt I was really privileged to have the opportunity to attend the recent National Rural Safety Conference. The program had been carefully and effectively planned. Many of the speakers were well known and of national reputation. Most impressive was the high degree of earnestness shown by all participants to work together in attacking the problem of safety on the farm. I shall attempt to give you a few quotations from

some of the Conference speakers in the hope that you, too, may be eager to join with the groups represented in this Safety crusade.

Doctor Fister, president of the American Medical Association, said in the keynote address: "Education is the first step to accident prevention. Let us *saturate* America with safety education down to our teenagers." (Comment: Here, too, we Auxiliary members can help, for we have worked long in the field of Safety.)

Former Governor of Arizona, Howard Pyle, currently chairman of the National Safety Council, asked the provocative question: "Are we guilty of caring not quite enough to be interested in what happens to people where we live? Could it be that the community at large may not *really* care what happens? Farm safety should be made a twenty-four hour way of life!" (An inspiring slogan! Should this be of concern to us here in Iowa?)

An orthopedic surgeon felt 70 per cent of farm accidents could be prevented if we had the *determination* to do this. He also commented on the need for more tetanus immunization in farm areas. (Helping its County Medical Society with a county wide tetanus-diphtheria immunization program was the project of one of our Auxiliaries last year. Would you like to make it a project of yours this year?)

An official from the U. S. Department of Health said Iowa is one of six states with the highest frequency of farm accidents in the United States. Some others were South Dakota, Montana, Minnesota, Wisconsin. (Should we go to work on taking Iowa off this list of distinction?)

A representative of a farm implement company, who is a research expert in the field of safety, told of unceasing efforts of implement manufacturers constantly to upgrade safety devices in their machinery to make them safer to operate. He said: "There is work for all of us to do in helping the farm family to live safely, and I can assure you that the tractor and implement industry is happy to join its efforts with yours toward that end." (Reassuring to know.)

A warm, friendly psychiatrist with a love for farm people said that the problem of safety on the farm is predominantly one of depression that leads to carelessness, lack of judgment, etc. A physician from a rural area also made this same observation and quoted many instances of the results of these depression-connected farm accidents that he had observed in his practice.

Appalling statistics of fatalities or disabling accidents involving the use of heavy and potentially lethal farm machinery were quoted at the conference. To those of you who do not feel too close to the rural scene, let me ask you to translate these statistics into human beings—husbands, fathers, brothers, children and yes, occasionally, wives and mothers, as they work in cooperation with their husbands at farm jobs. (So many of these accidents are needless. Is there a place for us here?)

Doctor McCleave, head of the AMA's Department of Religion and Medicine, concluded the Conference and left us with this soul-searching question: "Am I my brother's keeper?" If you can answer, "I am and *do* care" then you will naturally set out to *do* something about it.

Perhaps if *you* will think this question through, "Am I my brother's keeper?" you will find yourself becoming more strongly motivated to *do* something about this phase of Rural Health this coming year.

—MILDRED LEINBACH (Mrs. S. P.)
Rural Health Chairman

SWAT

SWAT—Safe Water Activity Training

Perhaps your Safety chairman would like to promote this activity in your area. The objective is to reduce accidents and deaths resulting from water activity by LEARNING TO SWIM. Drowning is the fourth leading type of fatal accident, causing 7,000 deaths each year. Hard to believe with all the municipal swimming pools and every young person in town enjoying that facility! There are still many who do not know how to swim, who don't go to camp, and who don't enroll in swimming classes, but do go near the water.

There are films and printed materials available from your local Red Cross and from the A.M.A. as well as from the National Safety Council.

Points to stress in a water safety program are:

1. Everyone Learn to Swim
2. Practice staying afloat with clothes on
3. Swim only where there are life guards
4. Swim with others—never alone
5. Learn how to give mouth-to-mouth respiration
6. If you can't swim, wear a life preserver whenever you enter a boat.

Just a little experience in the water is not enough: people need to learn to swim well enough to take care of themselves in the water in an emergency.

Check every single member of an organization as well as your family to make sure that they can swim. Those who cannot are the ones to look for: help them to get instruction.

Marion County Auxiliary

The Woman's Auxiliary to the Marion County Medical Society recently visited the County Home and after visiting with the patients, presented each with a gift. During luncheon, Mrs. Jane Buffo, a county Auxiliary member, entertained the group with several accordion numbers.

New officers were elected at a meeting in March. They are: president, Mrs. T. D. Clark; vice president, Mrs. Yme Sloterdijk; treasurer, Mrs. A. M. Schanche; recording secretary, Mrs. T. R. Ford; and corresponding secretary, Mrs. C. J. Ryan.

At this meeting Mrs. D. A. Mater was given special recognition and presented a gift for being instrumental in organizing the Marion County Auxiliary and serving as its president the past two years.

On March 29 a seven o'clock breakfast in recognition of Doctor's Day was held at the Maple Buffet with husbands of the members as guests.

Officers' Names Needed

Mrs. S. M. Korson, Box 111, Independence, your newly elected second vice-president who is also program chairman, is anxious to have the names of your 1963-1964 officers and committee chairmen. She has mailed questionnaires to all county Auxiliaries who have not yet sent this information either to the headquarters office in Des Moines or to her. Will you please forward this information to her as promptly as possible.

Program Planning—1963

Mrs. Robert Dunlevy, national program chairman, has many excellent suggestions in her recent editorial in the *BULLETIN* titled "Thoughts on Program Planning," which are being brought to you in this brief article.

"Program planning begins with continuity. You begin where you are and use what you have. We really have a great deal. We have a wealth of reference materials in the states and counties. The value of preserving and passing on these materials from officers and chairmen to their successors has never been more important.

"Newness has never been a measure of quality. Browse through the plans and outlines of former chairmen. Check the film lists and kits. Study the *BULLETIN* which contains many excellent articles not limited to a particular date. Additional aids are the *AMA NEWS* and *TODAY'S HEALTH*.

"Auxiliary activities demonstrate more and more our purpose as an organization dedicated to the improvement and maintenance of good health and medical care for all citizens. Again we request the use of programs associated with this purpose. This in no way implies that they must be dull or stereotyped, nor that an entire meeting must be devoted to a health subject.

"Your collective activities reflect the Auxiliary, and it is through your efforts in program planning that members will be stimulated to excel in achievement."

I am sure these "Thoughts" will assist you in planning for your 1963-1964 programs at your committee meetings during the summer.

Pride and Pregnancy

Pride goeth before backache, according to a Viennese obstetrician.

Unwed expectant mothers usually have easier pregnancies and confinements than married mothers, due largely to the unwed mother's posture in carrying her unborn child. Albert W. Bauer, M.D., says that the married mother "carries her pride before her like a banner, and drags behind her a crippling backache which often becomes chronic." The unwed mother, having reason to hide her condition, attempts to conceal her enlarging abdomen by pulling in her buttocks. This produces a rotation of the pelvis which flattens the abdomen and reduces the possibility of lumbar lordosis, a condition commonly associated with pregnancy.

Another consequence of the poor posture of most married mothers, Dr. Bauer reports in *LANCET*, is a tendency to overstretch the abdominal muscles, which makes them hypersensitive and less efficient in labor. He believes that the unwed mother's stance causes the fetus to lie more nearly parallel to the maternal spine. He also discourages the wearing of high heels because they greatly increase the possibility of hyperlordosis.

The expectant mother should not "eat for two." It is the quality of the diet and its content of protective substances which count, Dr. Bauer maintains. "In pregnancy, not only is the intake of protein oxidized to the same degree as in the normal, but all processes of oxygenation are diminished—which probably means that the body works more economically during pregnancy and requires even less calories than usual."

He advocates the reduction of fat intake to a minimum, cutting out such foods as fat meat, bacon, butter and cream. He stresses the importance of larger than usual quantities of minerals and calcium, and cautions that patients put on such a dietary regimen must be told to reduce their salt intake, for salt tends to impair calcium utilization.

—MEDICAL WORLD NEWS

Have you moved in the past few months?
PLEASE send any changes of address to 529-36th Street, Des Moines 12. Communication is a necessity: Do help us keep our mailing list up to date. You are our best source of accurate information.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

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JULY, 1963

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President's Address

GEORGE H. SCANLON, M.D.

Iowa City

I AM SURE EACH OF US would like to feel that during our stay on earth he will make some worthwhile contribution to mankind. Perhaps, to some of us, an active role in the affairs of medicine, in addition to caring for the sick, partly fulfills this human urge to serve others.

Frankly, I was stimulated to become active in the Iowa Medical Society in the hope that I could assist in the solution of some of its problems. Now, as I come to the end of a decade of direct involvement, I find that more problems are confronting the Society than were disposed of during my years of experience.

MEDICAL AID FOR THE NEAR-NEEDY AGED

I believe that organized medicine is having difficulty with the public today because we physicians have spent too much time bickering among ourselves—time which we could better have spent uniting in a common effort to bring to light the fallaciousness of the charges that are leveled against our profession by adversaries who have but one objective—control of the practice of medicine.

I don't for a minute want to convey a defeatist attitude, for I think we are finally uniting. A good example of what can be achieved by a common effort is the victory which occurred on July 17, 1962, when the United States Senate voted to table an amendment which would have kept the King-Anderson Bill alive in the last session of Congress. Medicine's performance at every level was truly outstanding, and it exemplified what can be done when physicians, properly motivated, work together in a common cause, with the public's interest at heart. There is no question that we shall again be faced with a threat as great as existed on July 17, last year, and we must make an all-out effort to prepare for it.

We are told that the climate in Congress at this time is not favorable to the passage of legislation of the King-Anderson type. This is no more than a supposition, and there is considerable possibility that the House of Representatives will be asked to vote on the King-Anderson Bill before Congress adjourns. We know hearings are to be scheduled

by the House Ways and Means Committee this summer and, based on my information, the bill will probably be voted on by the House of Representatives in July or August. This means we must have every vote counted in advance.

Fortunately, we are blessed with a congressional delegation that is almost 100 per cent opposed to the administration's proposal for financing health care for the aged through Social Security. This, I might add, is not accidental. The people of Iowa have been selective, and the doctors and their allies have made that extra effort to keep the Iowa representatives informed on their legitimate reasons for opposing this undesirable and unnecessary legislation. To illustrate, I want to read to you a letter which I received from Congressman Schwengel following a recent trip which several of us from the Society made to Washington:

"Dear Doctor Scanlon: It is always a pleasure to be with the representatives of the Iowa Medical Society. Your group does an outstanding job of keeping the Iowa Congressional delegation up to date on your activities in the State and your position on national legislation. The March 5th meeting was one of the best that I have attended since I have been in Congress. All of us profited by the reports which were given and by the exchange of viewpoints. . . . We trust that you will stay in close touch with the progress of the Kerr-Mills appropriation in Iowa and let us know about any developments."

I want to add that while we have been carrying on an active campaign against King-Anderson type legislation, we've been equally active in campaigning for a Kerr-Mills program in Iowa. We believe that Kerr-Mills is the right approach to the solution of the problem, and is the best mechanism to determine the extent to which the aged in Iowa are in need of medical assistance. Other speakers during the next two days will discuss these subjects thoroughly, so I shall say nothing more than to emphasize that we are for Kerr-Mills; we have good enabling legislation, which was passed in the last session; and now, we must have an appropriation to permit implementation of it.

THE IMS AND BLUE SHIELD MUST WORK TOGETHER

In addition to being president of the Iowa Medical Society, I also serve as chairman of the Board of Directors of Blue Shield, and I want you all to know that I do not take the responsibilities of the latter office lightly. I feel that I have a definite

obligation to provide leadership in seeing to it that the physicians of Iowa—both participating and non-participating—have a full understanding of all of the Blue Shield programs, particularly those that commit participating physicians to accept a Blue Shield allowance as full payment for services.

Now that my duties as president of the Society are nearly completed, I intend to devote a majority of my available time to Blue Shield. It is my hope that beginning next fall, Blue Shield and the Iowa Medical Society can join together in a series of meetings at the county, multi-county, or district levels. If at all possible, I plan to attend each of these meetings, and report on behalf of Blue Shield, and I assume a principal officer of the Iowa Medical Society will appear as its spokesman.

I know that the members of the Board of Directors of Blue Shield would never intentionally mislead a physician, nor would the Medical Society officers. The common objective of both organizations is to perfect Blue Shield plans that will serve the best interests of all concerned. This can be accomplished only through maximum cooperation and understanding. Blue Shield cannot expect all participating physicians to be "Simon-pure," nor can the Medical Society expect this of its members. Through the actions of its Grievance Committee and Judicial Council this past year, the Iowa Medical Society has demonstrated that it will not knowingly tolerate physicians in its membership who are guilty of unprofessional conduct. We have the records to prove it. It is encouraging to me, and I am sure it is reassuring to all doctors and the public, that the medical profession is policing its own ranks.

A WAY TO GET MORE GENERAL PRACTITIONERS

My participation in organized medicine has been unusual and gratifying. I have seen the authority of the Board of Medical Examiners strengthened, the issue of the corporate practice of medicine by hospitals clarified, and the growth of Iowa Blue Shield from a handful of members to over 600,000 people, with a monthly claims volume of over one million dollars; and perhaps before the close of this Iowa General Assembly, there will be in existence a Composite Board of Medical Examiners that will have jurisdiction over both doctors of medicine and doctors of osteopathy.

Looking to the future, I foresee two very serious problems. These involve internships, and their effect on the supply of general practitioners; and the ever-rising costs of health care.

What can we do to increase the number of general practitioners, who are so vitally needed by the American people for their medical care? Of the 1960-61 medical school graduates, only 18 per cent entered general practice. Some of these

will eventually leave general practice and enter specialty training programs.

Approximately 80 per cent of all people seeking medical care first call or consult a general practitioner. This, I am sure, reflects their faith in the judgment and knowledge of the family physician.

Coincident with World War II, the two-year rotating internship practically disappeared. Moreover, the marked increase in residencies enhanced the unpopularity of the two-year programs. There are currently six programs in family practice and nine programs in general practice approved on a pilot basis. Unlike the family practice programs, the general practice programs permit a block assignment on the surgical service. In their plan or organization, some of the general practice programs resemble the two-year rotating internships. These programs are meeting with very little enthusiasm from medical school graduates, and their future is consequently very uncertain. It seems sheer folly to expect these programs to fill the increasing need for general practitioners.

Where must we look for a solution to this problem? It is unwise, I believe, to look for the answer in the above programs, which began on a pilot basis mainly in university-affiliated hospitals. Can the medical school-affiliated hospital intern programs be expected to fill this need when the great majority of trainees at such places are interested only in obtaining residencies in that institution, leaving only a very small minority to enter general practice or to look for residencies elsewhere?

We can conclude, then, that it is primarily the responsibility of the University Hospital to train specialists. Based on this assumption, the intern could then receive his basic primary postgraduate education in a well organized and active community hospital. Thus, he would be better qualified to enter general practice or a residency program. To this end, we must look for the community hospital to supply the general practitioners of the future.

Circumstances require a great cooperative effort on the part of medical schools, medical societies, community hospitals, and general practice organizations. With the marked population increase, our common objective must constantly be to assure the patient the best possible medical care. For this reason, the general practice segment of our medical team must not be lost.

In my judgment, increasing the training requirements beyond the one year rotating internship is not the solution to the problem of obtaining more physicians for general practice. Instead, the medical school graduate should be encouraged to obtain a good one-year rotating internship in the area in which he intends entering practice, where he will have consultants available for those patients requiring specialist care. This arrangement would provide the busy practitioner time to

care for the majority of his less complicated cases, which do not require the services of a specialist.

We are fortunate, here in Iowa, that Dr. Robert Hardin, dean of the State University of Iowa College of Medicine, is extremely interested in increasing the number of general practitioners for the state. He is encouraging intern training in qualified community hospitals, and is emphasizing the medical school's responsibilities in the conduct of residency programs.

REDUCTIONS IN THE COST OF MEDICAL CARE

We are very much concerned about rising health care costs. Since people rationalize as they do, it is unlikely that they will ever find it convenient to budget for their health care except through some prepayment mechanism. When people feel they cannot afford prepayment protection, they will turn to other sources for relief, and in the absence of a better solution, the government may be a likely choice.

We've been exploring ways and means to determine over- or under-utilization of hospital and medical services. To date, we haven't come up with the answer. We are conducting a study to determine the extent to which hospital utilization committees exist, and whether or not they are serving a purpose.

We may undertake a pilot project which will involve visits to a limited number of hospitals in various selected locations by a team of physicians and auditors, to inspect the records of the chosen hospitals, in the hope that we can determine the extent to which we have a problem, and then evolve a solution.

Of one thing I am certain: Controlling health care costs must be a collective effort on the part of the physicians, the hospitals and the community.

The finger of responsibility for hospital occupancy is pointed directly at the physician, although there are other factors which influence a patient's admission to a hospital, and the length of his stay. Essentially, this is a fact which we must accept. To point up this matter of where the responsibility for hospital utilization lies, at least in one man's judgment, I'll quote a statement which appeared in Mr. Robert M. Sigmund's article titled "What Utilization Committees Taught Us," published in the February, 1963, issue of *MODERN HOSPITAL*:

"Sometimes we speak loosely of hospital bed utilization by the population, giving the impression that patients utilize the beds. Of course, this is not entirely accurate. Physicians utilize the beds; patients lie in them. And a patient cannot have the privilege of lying in a hospital bed unless so ordered by a physician who has the extremely valuable privilege of giving this order."

We need to determine whether or not the people are willing to have a part in preserving the volun-

tary approach by accepting the philosophy of deductibles and co-insurance, and we need to determine to what extent services that are now being provided in hospitals can be as well provided on an outpatient basis. Finally, we need to determine whether patients are remaining in the hospital longer than is really necessary.

A GLIMPSE AT THE FUTURE

Over the years, it has been very satisfying to observe the growth of the Iowa Medical Society, which is considered one of the outstanding such organizations in the country. How do we account for this preeminence? It is a consequence of our having had a considerable number of physicians who have been willing to devote the time and energy to provide the necessary leadership; a membership, generally, which has been willing to finance essential programs; and finally, a staff of dedicated people in our employ who have considered their jobs more than just a place to report for eight hours a day, with the paycheck as their primary interest.

Even so, we must continue to ask ourselves the question, "Where is the Medical Society going?" And, perhaps the only answer is, "Wherever the doctors of Iowa direct it."

I am convinced that if the Iowa Medical Society selects its officers on the basis of their interest, knowledge and ability, it can maintain the leadership it enjoys, and can continue to enhance its effectiveness.

In 1952, the Iowa Medical Society moved into its own building. At that time, it had nine employees, and the office building was constructed to allow for expansion. Now, a little more than ten years later, we find that our building facilities are totally inadequate, and even though the work load has at least doubled, if not tripled, our staff has not grown in proportion. As mentioned, we had nine people in 1952, and during the period of 11 years since then we have added five—for a total of 14 employees. In spite of the fact that we are lacking in facilities and are understaffed, we are much better equipped to cope with the ever-increasing problems that face organized medicine than are the medical societies of many other states.

I do not see how medicine can maintain a united front—nationwide—unless the physicians in all of the states come to the realization that they must have well-financed medical societies, with qualified staff members. Whether or not we like to accept the fact of delegating responsibility, we must admit that the right kind of non-medical people are essential for the business affairs of organized medicine and we must rely on them. Busy doctors must find time to make the policies and oversee their implementation, but they must be willing to depend on full-time staff members to perform the day-to-day chores.

What does this mean? First, it means that as physicians, our chosen vocation is to practice medicine, and our participation in the affairs of organized medicine is an avocation. Therefore, the people whom we employ to serve and protect our interests must have a basic philosophy and concept consistent with ours, and must be willing to devote the necessary time to the affairs of organized medicine. To do so certainly involves putting in more than the standard eight-hour day and five-day week. The selection of the right kind of personnel becomes the most important element in the operation of a medical society office.

I hope the AMA, as our parent organization, will agree with some of the things I've said about a paid staff, and will use its influence to convince

physicians in the various states that if the private practice of medicine is to be maintained, physicians must be willing to assume responsibility for financing a well-trained staff, housed in suitable quarters.

CONCLUSION

Now that I am finished with the bouquets and brickbats, I want to say that my service as president of the Iowa Medical Society has been a great privilege and honor, as well as being extremely rewarding. I wish to take this opportunity to express my appreciation to the many physicians, staff members and others who have been helpful to me in carrying out the duties of this office.

President-Elect's Address

C. V. EDWARDS, SR., M.D.

Council Bluffs

JUST 60 YEARS AGO, Sir William Osler, addressing the New Haven Medical Association during its centennial celebration, stressed the *educational value* of a Medical Society, especially as a means of providing continuous education to the doctor after medical school. Two of his sentences clarify this point:

"As the practice of medicine is not a business and can never be one, the education of the heart—the moral side of man—must keep pace with the education of the head.

"Our fellow creature cannot be dealt with as a man deals in corn and coal. The human heart by which we live must control our professional relations."

That was 60 years ago. How different today!

With our ever-changing conditions, the meaning of the words "educational value" has changed from scientific to commercial education. The format of our Society's activities has undergone a rapid change in the past few years because of two changes in our search for more education.

1. The development of the scientific meetings of the specialty societies and of the Academy of General Practice.

2. The increased importance of socio-economic and socio-political issues to our medical life, or

perhaps I should say to our continued existence as a profession.

The specialty societies and the AAGP are doing a magnificent job of providing for the continued scientific education of physicians. But the job of disseminating economic and socio-political information—that is being done less than satisfactorily.

As regards communications on subjects of this sort, by far the most dangerous foe we have to fight is apathy—indifference from whatever cause: (1) from lack of knowledge, (2) from carelessness in consequence of absorption in other pursuits, or (3) from a contempt bred of self-satisfaction.

Our profession is in difficulties—in a political struggle which threatens the traditions and high standards of medical practice. Medicine isn't merely a contestant in a popularity contest. It is a participant in a legislative conflict, and it can win only through informed and articulate leadership at every level. This conflict will not be without benefit if it arouses the individual from his apathy, and makes him conscious of a great truth—that only by earnest individual human effort can knowledge be made effective. The individual doctor, in his own office, must arouse his community from an apathy which now permits socialistic legislation to prevail without protest. Such leadership is essential at all times, but particularly now when our free practice of medicine is being challenged. Meeting this challenge has resulted in unprecedented publicity—both good and bad.

It is therefore imperative that our lines of com-

munication stress our many positive and constructive activities. At the same time, we must refute the fallacies and correct the misinformation which interfere with the accomplishment of our objective.

LET'S MAKE OUR COUNTY SOCIETIES MORE EFFICIENT

As president-elect, during the past year, I have been most impressed with the many activities of the headquarters staff in their efforts to disseminate information to the entire membership of the IMS. I regret that time does not permit the review of these programs. But despite this effort, adequate and effective communication has not been established between the Board of Trustees, the House of Delegates, the Executive Council and all of the members of the Society. The individual physician somehow isn't getting and using the information through which he could assume leadership in his community.

The top echelon officers ask "Why?" What more can we or the staff do? My observation, during my years as speaker and during the past year, has convinced me that the breakdown in communication has been in the county medical society and in the office of the individual doctor.

Time does not permit review of the evidence that the local society is a culprit. But here is one example. Four different letters have been sent out, to four different groups, asking for names of doctors willing to work on state committees. We asked especially for the names of younger men, so that we might get them started in State Society activities, and educate them in the problems that may have a definite bearing on their careers and

on their profession. Our replies from county society officers have been less than 50 per cent. The new names received have totaled 12, in addition to those received from the three counties that are now providing the largest number of committee members.

Gentlemen, *this is apathy. This is indifference.* This is the reason why most doctors cannot and do not assume the state leadership that is so essential to us in overcoming the forces that oppose us. Mr. Wilbur Cohen has been working for 20 years to put health care under Social Security tax. He can lose in session after session of the Congress. We, however, can lose but once! He is not apathetic. The State Board of Social Welfare is not apathetic, but we are apathetic!

EVERY DOCTOR SHOULD PARTICIPATE IN IN SOCIETY WORK

Now as regards the apathy of the individual IMS member. Our Society publishes a JOURNAL, and in each issue of it there are articles, announcements and news items of vital importance to all of us in our economic and political fight for survival. I implore you to check your copy of the JOURNAL each month for these items, and to take appropriate action.

Our headquarters office also issues occasional NEWS BULLETINS and LEGISLATIVE BULLETINS. Please caution your secretary against destroying them or laying them aside with your "junk mail." Instruct her, instead, to call each of them to your particular attention!

You are paying for these mailings; they are important to you and to your profession. Read them, and act in response to them!

Doctors Should Make Tuberculin Testing Routine

Physicians were urged, at a conference in Washington, D. C., on June 6, to give a tuberculin skin test to every patient they see who has an illness which tends to allow a tuberculosis infection to escape from the controls imposed by the body's defenses. The recommendation was made by Dr. William Russell, director of the Jefferson County Health Department, Denver, Colorado.

Specifically he called for skin testing for TB in such conditions as hormonal problems, especially diabetes and hypothyroidism; silicosis; malignancies under chemotherapy; lymphoma; and pulmonary diseases. He warned that the physician cannot afford to guess about whether his patient has a negative or a positive tuberculin reaction.

Reporting on skin testing surveys in Denver,

Dr. Russell said that 35 per cent of the adult population were shown to be tuberculin reactive (positive), and that less than 6 per cent of the senior high school pupils and college students were shown tuberculin positive. However, he said, the older the adult, the more likely the positive reaction, up to age 65. (The skin test provides information about the infection, but it does not tell whether or not tuberculosis is present.)

Dr. Russell was one of six health leaders who discussed the problem of tuberculosis control at a conference sponsored by the District of Columbia Academy of General Practice, the American College of Chest Physicians, the Medical Society of the District of Columbia and the District of Columbia Tuberculosis Association.

Coming Meetings

IOWA

- July 15-16 **Sixteenth Annual Community Health Education Workshop (Iowa health agencies).** Iowa State University Memorial Union, Ames

CONTINENTAL U. S.

- July 3-7 **Advanced Seminars in Dermatology (University of California Alumni Association).** Tahoe Alumni Center, Lake Tahoe, California
- July 3-7 **Advanced Seminars for General Practitioners (UCLA).** University of California Residential Conference Center, Lake Arrowhead, California
- July 8-10 **Obstetrics and Gynecology.** University of Colorado Medical Center, Denver
- July 8-19 **West Coast Institute on Alcoholism (National Committee for the Prevention of Alcoholism).** Loma Linda University, Los Angeles
- July 10-14 **Advanced Seminars in Pediatrics (UCLA).** University of California Residential Conference Center, Lake Arrowhead, California
- July 12-13 **International Conference on Renal Hypertension.** Columbus, Ohio
- July 12-13 **Seventeenth Annual Rocky Mountain Cancer Conference (Colorado Division of the American Cancer Society and the Colorado Medical Society).** Brown Palace Hotel, Denver
- July 14-19 **Second International Conference on Congenital Malformations (National Foundation).** Americana Hotel, New York City
- July 18-20 **Dermatology.** University of Colorado Medical Center, Denver
- July 21 **"Psychosomatic Factors in the Etiology of Major Pathological Lesions"—11th Quarterly Seminar for Family Physicians (Western Missouri District Branch of the American Psychiatric Association and the G. Wilse and Olive B. Robinson Memorial Fund).** Neurological Hospital, Kansas City, Missouri
- July 22-24 **Gnotobiotic Workshop and Symposium (Ohio State University College of Veterinary Medicine and the Association of Applied Gnotobiotics).** Sisson Hall Auditorium, Columbus, Ohio
- July 29-Aug. 9 **East Coast Institute on Alcoholism (National Committee for the Prevention of Alcoholism).** American University, Washington, D. C.
- Aug. 4-7 **Advanced Seminars in Urology (UCLA).** University of California Residential Conference Center, Lake Arrowhead, California
- Aug. 5-9 **Sixth Annual Postgraduate Course in Pediatrics (University of Colorado School of Medicine).** Stanley Hotel, Estes Park, Colorado
- Aug. 7-9 **Anesthesiology.** University of California, Los Angeles
- Aug. 7-11 **Advanced Seminars in Internal Medicine (UCLA).** University of California Residential Conference Center, Lake Arrowhead, California
- Aug. 11-14 **American Society for Pharmacology and Experimental Therapeutics.** San Francisco
- Aug. 19-23 **Medical Audiology Workshop.** University of Colorado Medical Center, Denver
- Aug. 20-27 **International Association for the Coordination of Psychiatric and Physiological Methods and Psychology.** Washington, D. C.
- Aug. 23-24 **The Shoulder—Anatomy, Pathology and Surgery.** University of California, Los Angeles
- Aug. 25 **American Association of Electromyography and Electrodagnosis.** Sheraton-Dallas Hotel, Dallas
- Aug. 25-30 **American Congress of Physical Medicine and Rehabilitation.** Sheraton-Dallas Hotel, Dallas
- Aug. 26 **Annual Meeting of the American Academy of Physical Medicine and Rehabilitation.** Sheraton-Dallas Hotel, Dallas
- Aug. 26-29 **American Hospital Association.** Waldorf Astoria Hotel, New York City
- Aug. 26-30 **American Physiological Society.** University of Miami, Coral Gables, Florida
- Aug. 26-30 **Gordon Research Conference on Cancer.** New London, New Hampshire

ABROAD

- July 14-27 **Fifth International Postgraduate Course in Reconstructive Surgery of the Nasal Septum and External Pyramid.** University of Leiden, The Netherlands. Write: Prof. Dr. H. A. E. van Dishoeck, University of Leiden, Academisch Ziekenhuis, Leiden, The Netherlands. Or American Rhinologic Society, 530 Hawthorne Place, Chicago 13
- July 21-25 **Third International Congress of Group Psychotherapy.** Milan, Italy. Write J. L. Moreno, M.D., Box 311, Beacon, New York
- July 22-26 **World Federation for Mental Health.** Amsterdam. Write: 19 Manchester Street, London W1
- July 23-27 **International Society of Chemotherapy.** Liederhalle, Stuttgart, Germany. Write: Clemens A. Hackethal, 318 West Woodruff Avenue, Toledo 2, Ohio
- July 28-Aug. 1 **International Psycho-Analytical Congress.** Stockholm. Write L. Börge Löfgren, M.D., Narvavägen 25, Stockholm
- July 31-Aug. 16 **Sixth Annual Refresher Course (University of Southern California).** Hawaii and on board the *S.S. Lurline*
- Aug. 9-15 **International Congress on Nutrition.** Edinburgh, Scotland. Write: Secretary 6th International Congress on Nutrition, Department of Clinical Chemistry, Royal Infirmary, Edinburgh
- Aug. 11-16 **Sixth International Congress of Gerontology.** Copenhagen. Write: P. From Hansen, M.D., D.I.S. Congress Service, 19 Sankt Peders Straede, Copenhagen
- Aug. 25-28 **Fifth European Congress on Rheumatic Diseases.** Stockholm. Write: Olle Lövgren, M.D., St. Eriks Sjukhus, Stockholm
- Aug. 26-30 **International Congress of Nephrology.** Prague, Czechoslovakia. Write: V. Fencel, M.D., Institute of Cardiovascular Research, Prague 4-Krc
- Aug. 26-30 **International Symposium on Radiological Health and Safety.** Vienna. Write: International Atomic Energy Agency, 11 Kartner Ring, Vienna 1
- Sept. 1-7 **International Congress on Orthopaedic Surgery and Traumatology.** Vienna. Write: Karl Chiari, Grillparzerstrasse 14, Vienna 1
- Sept. 2-6 **International Congress on Clinical Pathology.** Mexico City. Write: E. Cervera B., M.D., Asociacion Mexicana de Laboratorio Clinico, Durango 213, Mexico 7, D.F.
- Sept. 2-10 **International Congress of Genetics.** The Hague, Netherlands. Write: S. J. Geerts, 14 de Monchyplein, The Hague
- Sept. 9-13 **Conference on Cellular Control Mechanisms and Cancer.** Amsterdam. Write: O. Mühlbock, Netherlands Cancer Institute, Antoni van Leeuwenhoek-Huis, Sarphatistraat 108, Amsterdam C
- Sept. 15-21 **International Congress on Occupational Health.** Madrid. Write: D. P. Sangro Torres, M.D., Instituto Nacional de Medicina y Seguridad del Trabajo, Ciudad Universitaria, Madrid
- Sept. 16-20 **Ciba Foundation Guest Symposium on Mother-Infant Interaction.** London. Write: Ciba Foundation, 41 Portland Place, London W1
- Sept. 16-22 **Ninth Congress on Vital Substances, Nutrition and Diseases of Civilization.** Lindau and Gengen, Germany. Write: Bemeroderstrasse 61, Hanover-Kirchrode, Germany
- Sept. 19-21 **Congress of the International Society of Cardiovascular Surgery.** Rome, Italy. Write: H. Haimovici, M.D., 862 Park Avenue, New York 21
- Sept. 19-22 **Fifth International Congress of General Practice.** Salzburg, Germany. Write: K. Engelmeier, M.D., Internationale Gesellschaft für Praktische Angewandte Medizin, Langestrasse 21, Oelde, Westf. West Germany
- Sept. 22-28 **Seventeenth World Medical Assembly.** Mexico City. Write: Harry S. Gear, M.D., 10 Columbus Circle, New York 19
- Sept. 23-27 **World Federation of Neurology.** Strasbourg, France. Write: H. Fishgold, M.D., Institut Bunge, 59 rue Philippe Williot, Berchem-Antwerp, Belgium

(Continued on page xxxi)

Flatfoot in Children and Adolescents

FRANK P. ALICANDRI, M.D., and
PATRICK J. KELLY, M.D.
Rochester, Minnesota

The general condition, flatfoot, is divided into different types in this paper. This classification is admittedly artificial, but it seems useful for purposes of discussion.

HYPERMOBILE FLATFOOT

PAINFUL FLATFOOT in the adult, in some instances, can be prevented if treatment is instituted in childhood. The problem is to determine which child will have painful feet as an adult. Actually, it is often difficult to know exactly what is a normal foot in an infant or child.

The human foot is an organ of locomotion and weight bearing. The support provided by the foot is mediated mainly through its bony arches¹ which, in turn, are supported by ligaments and muscles (Figure 1). Loss of function in any one of these elements, particularly in the bony arches and their articulating joints, can result in a painful foot in adolescence or adulthood.

A basic knowledge of the prime motions of the foot and ankle is necessary to an understanding of flatfoot. Inversion or supination (turning the foot inward) and eversion or pronation (turning the foot outward) are motions that occur between the talus and the calcaneus and, to a lesser degree, in the midtarsal joints. Abduction and adduction occur mainly through the midtarsal joint. Dorsiflexion and plantar flexion occur mainly at the ankle, between the talus and the tibiofibular mortise. There is some plantar and dorsiflexion in the subtalar and midtarsal joints too. These fundamental motions are illustrated in Figure 1.

Dr. Alicandri is a fellow in orthopedic surgery and Dr. Kelly is a staff member of the Section of Orthopedic Surgery at the Mayo Clinic and Mayo Foundation. Dr. Kelly read this paper at the meeting of the Iowa Chapter of the American Academy of General Practice and the Des Moines County Medical Society in Burlington, Iowa, November 1, 1961.

A child who continues to walk with his feet pronated, that is, in the flatfooted position, will wear out the medial sides of his shoes. Pain, as a symptom, is not the usual presenting complaint in the child; rather, he is usually brought to the doctor because of the parents' concern.

What causes flatfoot? The arch of the foot is determined by the bones of the foot. The muscles and ligaments also contribute to the arch, but not to so great a degree. If the bones are abnormal or articulate abnormally, the muscles and ligaments must provide more than a normal amount of support, and with this added strain, these structures cannot function adequately. An abnormality of any of the supporting structures, especially of the bones, may lead to flatfootedness.^{2, 3}

Harris and Beath,⁴ in their study of young adults in the Canadian Army during World War II, found that those with painful flatfeet had bony anomalies in the foot. The neck of the talus was longer and was poorly supported because of an absence of the facet on the abnormally narrow sustentaculum tali of the calcaneus. With weight bearing, the long neck of the talus would slip off the os calcis medially and at the same time push the os calcis into a valgus position (Figure 2). They postulated that these anomalies were congenital. At first, the bones may have only a slight abnormality, but this may be enough to cause an unbalanced foot. With time, the bones became increasingly deformed, compromising further the shape of the bone and also causing stretching or shortening of the ligaments. It is important, therefore, to recognize this abnormality and to start treatment while the bones are still malleable.

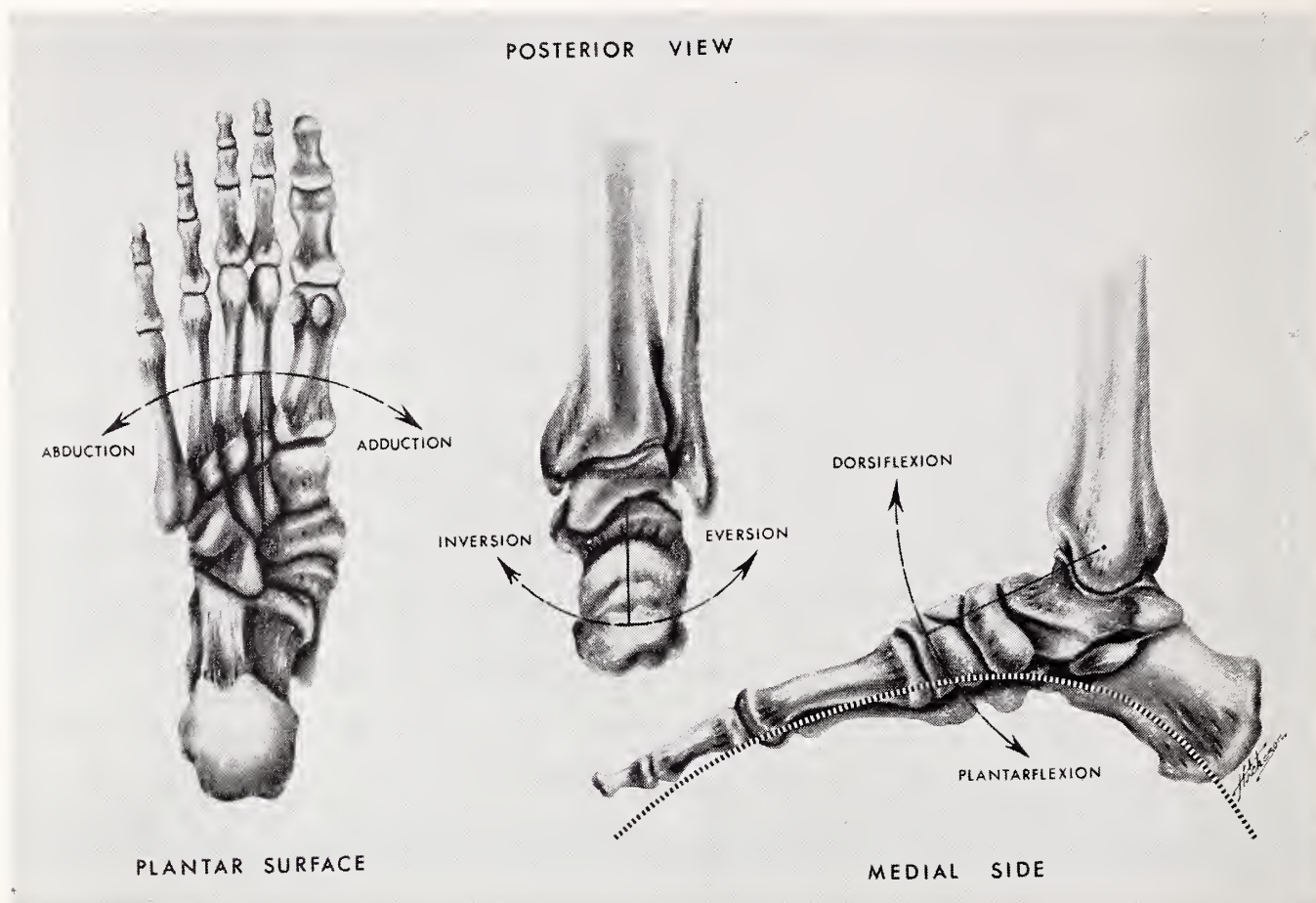


Figure 1. Illustration of the prime motions of the human foot. Left. Abduction and adduction occur in the midtarsal joints. Center. Eversion (turning the foot outward) and inversion (turning the foot inward) occurs at the subtalar joint between the calcaneus and the talus, and not at the ankle joint. Right. Plantar and dorsiflexion occur mainly at the ankle joint. This figure also illustrates the main bony arches of the foot.

Signs and Symptoms.—There are very few symptoms, but, as the child grows into adolescence, he will notice fatigability of the foot, and occasionally pain may develop in the longitudinal arch region. When bearing weight, the foot will pronate and the arch will appear flat (Figure 2). When viewed from behind, the heel is seen to turn outward also, or to assume a valgus position (Figure 3). When the foot is suspended and relieved of its weight-bearing function, the arch will return to a more normal appearance. One may note hypermobility of the subtalar joint or a tightened heel cord associated with this condition. In infancy, the fat pad in the longitudinal arch of the foot is enlarged, and a normal foot may appear to be a flatfoot. However, these conditions can be distinguished by palpating the arch and by noting the presence or absence of heel valgus.

A milder degree of flatfootedness is difficult to diagnose. As the child gets older and more active, he may experience pain and fatigability in his foot. In the more uncommon case of severe flatfoot, there is no such problem in evaluation. The arch is completely flat, the heel is completely turned out (valgus deformity), and the heel cord is tight.

Treatment.—An attempt should be made to alter the abnormal lines of weight-bearing stress to a normal balanced line, in the hope that these bones will grow in a more normal shape.⁵

The treatment consists primarily of supplying good footwear. The recommended shoe is an oxford with a straight last, a well-fitting heel counter, a round toe, and a shank as wide as the waist of the foot. The heel height should be about $\frac{3}{4}$ inch for the younger child, and as the child gets older, it should be about an inch for boys and about an inch and a half for girls. A $\frac{1}{8}$ inch inner heel wedge is recommended. It seldom is desirable to use an inner sole wedge because then the foot will have a tendency to slip laterally. A Thomas heel is used for heavy children, since it aids in support of the shank. If the foot is noted to be slipping laterally, an outer sole wedge under the fifth metatarsal head is added. This will counteract the lateral sliding effect and also will tend to prevent the forefoot from turning outward. A longitudinal arch support, the apex of which should be from $\frac{1}{4}$ to $\frac{1}{2}$ inch high, can be placed in the shoe. This arch will elevate and support the foot in a more normal position and will decrease

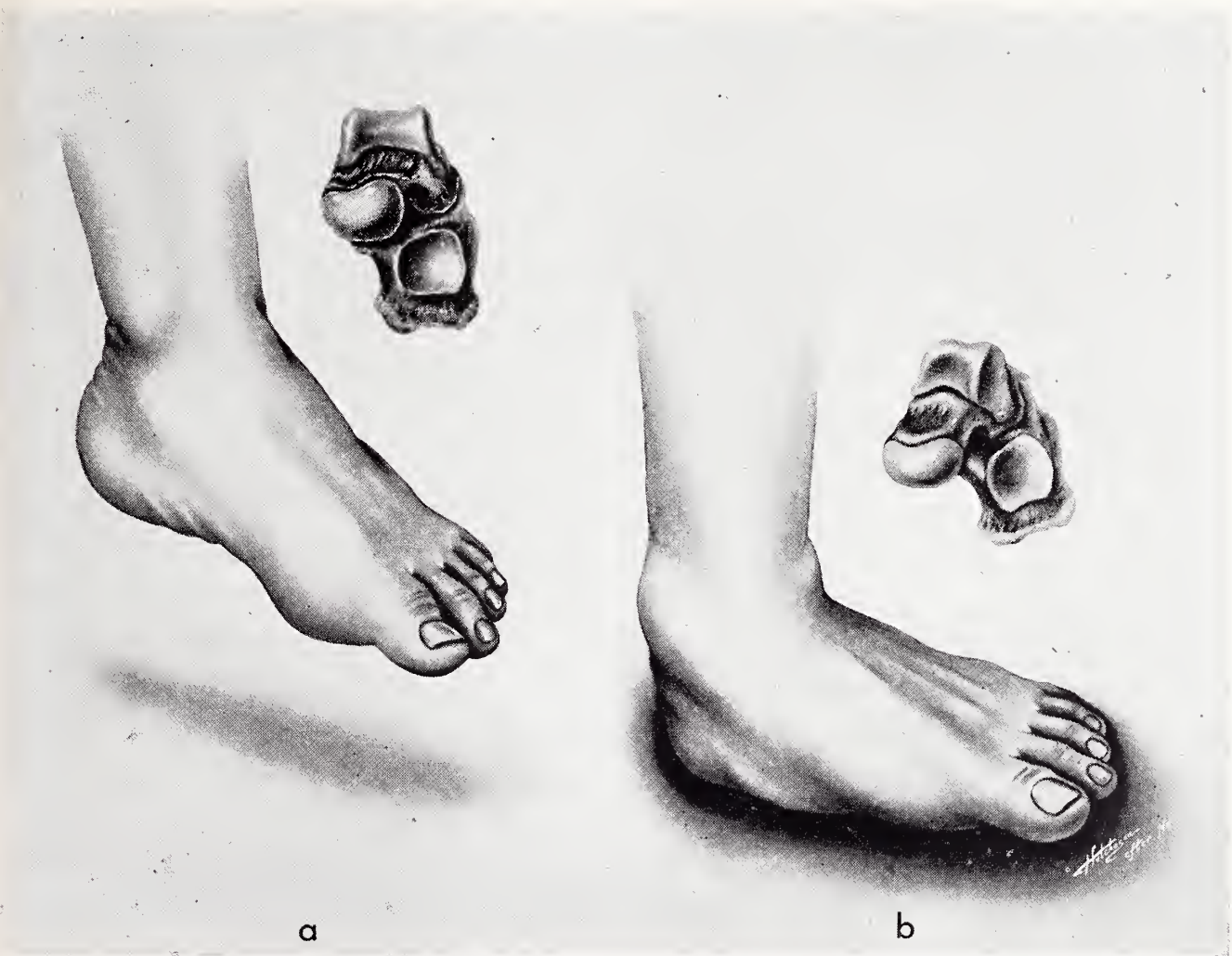


Figure 2. a. Normal relationship of the talus to the calcaneus in a hypermobile flatfoot when not bearing weight. b. When the hypermobile flatfoot is bearing weight, proper support of the talus is not provided by the os calcis, and the talus slips off.

eversion of the foot. The value of corrective exercises is debatable.

Severe flatfootedness often defies the best efforts of the physician. Simple wedging and longitudinal pads often are inadequate. Rigid metal corrective supports are not recommended, for they are hard to make and are not tolerated by the patient. A molded leather insert in a high-top shoe is the best type of support. However, this treatment has disadvantages in that it requires frequent changing of the insert as the foot grows, and the aid of an experienced appliance maker is essential. These cases are rare, and usually surgical treatment will be necessary when the patient approaches adolescence or adulthood. The operation most commonly performed is triple arthrodesis or fusion of the subtalar, talonavicular, and calcaneocuboid joints when the child is between 12 and 14 years old.

No statistical evidence is available to support the contention that conservative measures will spare the patient the necessity of surgical treatment at a later time, but everything is to be gained and nothing is to be lost by the conserva-

tive early treatment of the hypermobile flatfoot. We must emphasize that not all flatfooted adults are symptomatic. Rather, it has been our experience that painful flatfootedness usually is noted



Figure 3. In the hypermobile flatfoot, the longitudinal arch flattens and the heel turns outward.

only in patients with short achilles tendons and hypermobile subtalar joints.

RIGID FLATFOOT

This condition has been recognized by orthopedists for a long time and originally was called "peroneal spastic flatfoot." The correct name is "rigid flatfoot." The term "peroneal spastic flatfoot" is incorrect since it implies that the peroneal spasm is the cause rather than the result. Actually, the foot is rigid in a pronated position, with a resultant shortening of the peroneal muscles.⁶

Tarsal Coalition.—This, the most common cause of rigid flatfoot, is about one third as common as hypermobile flatfoot. Rigid flatfoot is caused by an abnormal bridging between the bones of the foot, the most common ones being between the os calcis and the talus, and between the os calcis and the navicular. This bridge may be bony, cartilaginous, or fibrous. Such a bridge restricts

full range of motion in the foot and, in particular, restricts eversion and inversion (Figure 4a). Usually it causes pronation into the flatfooted position, a condition which is evident when the patient is standing.

Signs and Symptoms.—When the foot is suspended and is relieved of weight bearing, the arch



Figure 4. a. The right foot lacks subtalar motion; inversion is absent when compared to the normal left foot. b. When the foot is suspended, the longitudinal arch is still flattened and a normal contour of the arch does not return as it does in the hypermobile foot.



Fig. 5. Bony coalition of the os calcis and navicular bone indicated by arrow.

will not reappear as it does in the hypermobile type of flatfoot (Figure 4b), and on manipulation, the foot will not evert or invert normally through the subtalar joint (Figure 4a). Symptoms secondary to this abnormality usually do not become noticeable until adolescence, but nonetheless, the patient may be brought to medical attention earlier



Figure 6. Position of foot on roentgenographic plate and position of x-ray tube to demonstrate a talocalcaneal bridge.



Fig. 7. a. Right foot gives normal appearance. b. Left foot shows talocalcaneal coalition and obliteration of medial half of subtalar joint, indicated by arrow.

because the parents have observed the pronated, flattened foot.

Lateral roentgenograms may show the abnormal bony bridge between the involved bones (Figure 5). One must be mindful of the fact that not all of these bridges are bony; that is, they may be fibrous or cartilaginous and therefore will not appear on a roentgenogram. The normal bridging between the calcis and talus can best be demonstrated by a roentgenogram made in a special view (Figure 6). When a talocalcaneal bridge is present, the medial side of the subtalar joint is obliterated (Figure 7).

Treatment.—This type of flatfootedness is treated in the younger age groups by the use of supports in shoes (a longitudinal felt arch in a good shoe). In late adolescence, if the symptoms have not been relieved by conservative methods, an arthrodesis is indicated.⁷

Congenital Vertical Talus.—This also has been

called “congenital flatfoot” or “rocker-bottom foot.” It is a rare condition.

Signs and Symptoms.—Congenital vertical talus usually can be diagnosed soon after birth. The head of the talus, instead of articulating with the navicular bone in its normal horizontal position, points vertically downward into the sole of the foot (Figure 8). The forefoot now articulates with the superior aspect of the neck of the talus and is essentially in a position of dorsiflexion. The ligaments and muscles all are contracted into this abnormal position. Therefore, the deformity is held this way very rigidly and cannot be corrected by manipulation. This condition often is associated with other congenital abnormalities, such as arthrogryposis, spina bifida, and neurofibromatosis.

Treatment.—The treatment of this condition is extremely difficult. Casts, manipulation, and special shoes are generally inadequate. Surgical procedures on the soft tissues have been described,^{8, 9}



Figure 8. Congenital vertical talus. The neck of the talus is articulating with the navicular bone.

but, even when these correct the deformity, bony fusion usually is necessary, either by the method of Grice⁷ or by an arthrodesis of the tarsal joints.

Spastic Flatfoot.—A third type of rigid flatfootedness is that which occurs secondary to arthritis of the tarsal joints. It may be caused by gout, trauma, or rheumatoid arthritis, all of which are very rare in children. The peroneal muscles go into spasm, causing the foot to evert. These are systemic problems and demand medical treatment, although to prevent deformity, orthopedic treatment employing splints, braces and special shoes is important.

RELAXED FLATFOOT FROM SPECIAL CAUSES

There are other, less common causes of a flattened longitudinal arch. Cerebral palsy will re-

sult in flatfoot in some cases. In some young children, the Grice subtalar arthrodesis has proved helpful. In some rare congenital relaxations of joints, a form of flatfoot may be one manifestation of a general relaxation and hypermobility of the patient's joints.

SUMMARY

A review has been presented of concepts concerning the problem of flatfoot in children and adolescents, as known to orthopedists. Harris and Beath, in their survey of Canadian soldiers, have given us some valuable clinical knowledge of this subject. They also made the observation that flatfoot is not painful in all adults; therefore, it always will be a problem to determine which child will have painful flatfoot as an adult. Essentially, what is needed is a large study similar to the one performed by Harris and Beath, but in the younger age groups.

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Symbol Warns of Special Medical Problem

On June 14, the nation's doctors announced, through the American Medical Association, a new universal symbol which will tell anyone rendering emergency care to a person who is unconscious or otherwise unable to communicate that its wearer has a special physical condition requiring special attention.

The symbol, a hexagonal figure enclosing the sign of life with the staff of Aesculapius imposed upon it, may be displayed on a wristlet, an anklet or a medallion worn around the neck or elsewhere, will indicate that there are vital medical facts on the patient's health-information card in his or her wallet or purse. Thus, it is intended to be an alerting device.

The symbol will be worn by people with a wide variety of ailments. Diabetic coma, for instance, sometimes makes its victims appear intoxicated, and treatment, in consequence, may be dangerously delayed. The symbol could also indicate allergies to antibiotics such as penicillin, or any of a considerable number of other physical problems.



The Complications of

Hypodermoclysis in Infants and Children

J. M. STEFFEY, M.D.

Pomona, California

SOME PHYSICIANS, when confronted with a dehydrated infant or child, still have the attitude that giving subcutaneous fluids "won't do any harm, and may do some good." When they use subcutaneous fluids, they usually don't order a definitive amount that has been calculated on a scientifically sound basis, but instead order volumes rounded off to such convenient numbers as 500 or 1,000 cc. Also, the type of fluid they give isn't always based on the existing pathologic imbalance of water and electrolytes in the particular patient at the time of administration. Rather, they choose one of the commonly stocked solutions, and these unfortunately include 5 per cent glucose in water. The subcutaneous administration of fluids, under such a man's direction, may be carried to dangerous extremes. Indeed it has, on occasion been used in the treatment of hemorrhagic shock.

During the past year a number of patients with various diseases, have been admitted to Raymond Blank Memorial Hospital for Children, Des Moines, after having been treated with subcutaneous fluids. Four of those cases are presented to illustrate the increased morbidity and different types of complications which may result from the injudicious use of subcutaneous fluids.

CASE REPORTS

Case 1. (No. 350-699) A 4½-year-old white female was admitted to Raymond Blank Memorial Hospital for Children on October 13, 1961, because of a postoperative hemorrhage following tonsillectomy and adenoidectomy. The procedure had been performed at another hospital on the same day, and she had started hemorrhaging six hours postoperatively. Before being transferred, she had received an undetermined amount of subcutaneous fluid in each thigh. When she arrived in the emergency room approximately 12 hours postopera-

tively, her blood pressure was 70/50 mm. Hg; her pulse rate was 200 per minute and weak; and her respiratory rate was 50 per minute, with Kussmaul type respirations. Soon after her arrival, she vomited 150 cc. of old blood. Her thighs were twice the normally expected diameter at the sites where the subcutaneous fluids had been injected. The admission hemogram showed the hemoglobin to be 11.3 Gm/100 ml., and the hematocrit to be 38 per cent. Serum electrolytes were: carbon dioxide content 12 mM./L. (normal 18-26 mM./L.); sodium 140 mEq./L. (normal 138-146 mEq./L.); chlorides 102 mEq./L. (normal 99-111 mEq./L.); and potassium 4.7 mEq./L. (normal 3.8-5.1 mEq./L.).

A cut-down at the ankle was performed promptly, but it functioned poorly because of the generalized cardiovascular collapse, and therefore a cut-down was done in the femoral region. One hundred cubic centimeters of whole blood was given rapidly, and over the next six hours the patient received an additional 400 cc. of whole blood. The bleeding subsided, and the patient made an uneventful recovery.

Comments: Aside from causing further cardiovascular collapse, the subcutaneous fluids were the most likely cause of metabolic acidosis in this patient. Subcutaneous fluids obviously have no role in the treatment of hypovolemic shock. A second patient has recently been seen with hypovolemic shock—a six-week-old hemophiliac who had been treated with subcutaneous albumin and saline because of a bleeding circumcision.

Case 2. (No. 347-956) A seven-month-old white female was admitted August 5, 1961, with symptoms of vomiting and diarrhea of four days' duration. She had been treated with half-strength boiled skim milk, phenathiazine preparations per rectum, and for one day prior to admission, subcutaneous fluids of unknown quality and quantity. In the 24 hours prior to admission, she had had four generalized myoclonic seizures. The last time she urinated had been 18 hours before admission.

Physical examination at the time of admission revealed a temperature of 99.4°F.; a pulse rate of 120 per minute; and respirations of 26 per minute. The patient appeared pale and chronically ill, and was hyperirritable. The fontanelle was

Until recently Dr. Steffey was a resident in pediatrics at the Raymond Blank Memorial Hospital for Children, in Des Moines. He is now practicing his specialty in California.

flat and the mucous membranes were dry, but the skin turgor was normal. Otherwise, the physical examination was within normal limits.

An admission hemogram revealed a hemoglobin of 8.7 Gm./100 ml.; a hematocrit of 33 per cent; and a white blood cell count of 22,200/cu. mm., with 47 per cent neutrophils, 4 per cent bands, 36 per cent lymphocytes, 11 per cent monocytes, 1 per cent eosinophils, and 2 per cent metamyelocytes. The serum electrolytes at the time of admission were: carbon dioxide content 15 mM./L.; chlorides 92 mEq./L.; potassium 5.6 mEq./L.; and sodium 133 mEq./L. Urinalysis showed 4+ protein and 19 leukocytes, and the urine was loaded with red blood cells. The blood urea nitrogen was 140 mg. per cent. The patient was treated with intravenous fluids and was followed by means of numerous electrolyte determinations. Her hospital course was marked by oliguria, azotemia, hypertension and melena. She was finally discharged from the hospital 22 days after admission, but her renal function studies had not reverted to normal at that time.

Comments: Gastroenteritis and dehydration had been complicated by acute tubular necrosis in this patient. The subcutaneous fluids she had received probably contributed to the acute tubular necrosis—i.e. hypotension due to severe dehydration—by pulling fluids from the vascular space into the subcutaneous compartment containing the administered fluids. The early institution of proper intravenous fluid therapy would possibly have avoided this complication.

Case 3. (No. 328-889) A five-month-old white female was admitted to Raymond Blank Memorial Hospital for Children with the chief complaint of vomiting and diarrhea of two days' duration.

On the day that her symptoms began, she had been hospitalized and treated with 5 per cent glucose in water by hypodermoclysis. The vomiting ceased shortly afterward, but she had increasing diarrhea, with up to 20 stools per day.

The past and family history were not contributory.

At the time of admission, the patient appeared acutely ill and responded poorly to noxious stimuli. The temperature was 105.2°F. The skin turgor was of good quality, but the mucous membranes were very dry and the fontanelle was sunken. The remainder of the physical examination was within normal limits.

The initial hemogram showed: hemoglobin 9.9 Gm./100 ml.; hematocrit 31 volumes per cent; and white blood cell count 7,100 per cubic mm., with 74 per cent lymphocytes and 26 neutrophils. The serum sodium was 150 mEq./L.; the potassium 5.9 mEq./L.; the chloride 131 mEq./L.; and the carbon dioxide 13 mM./L.

After two days of intravenous therapy, the serum electrolytes had returned to normal and

the patient had improved clinically. She was discharged in good health six days after admission.

Comments: Two days of subcutaneous fluid therapy with 5 per cent glucose in water had no beneficial effect upon this patient's electrolyte imbalance or clinical course. The hyperelectrolytemia, which included the dangerous component of hypernatremia, had not been corrected by two days of subcutaneous fluid therapy. Indeed, the subcutaneous fluids administered may have caused water to migrate into the area of "clysis" and thus may have caused, or at least contributed to, the hyperelectrolytemia and hypernatremia.

Case 4. (No. 356-688) A 2½-year-old white female was admitted to Raymond Blank Memorial Hospital for Children on March 25, 1962, with the symptoms of vomiting and diarrhea of five days' duration.

She had been given 5 per cent glucose in water by hypodermoclysis for two days prior to admission. On the evening prior to admission and on the morning of admission, she had been given 500 cc. of 5 per cent glucose in water by hypodermoclysis (1,000 cc. in less than 24 hours prior to admission).

The past history was non-contributory.

At the time of admission, the patient was a well developed, well nourished white female in no distress. She was somewhat lethargic, but the mucous membranes were moist. The thighs were enlarged at the clysis sites.

Initial laboratory work revealed a hemoglobin of 12.4 Gm./100 ml.; a hematocrit of 39 volumes per cent; and a white blood cell count of 9,300 per cu. mm., with 44 per cent neutrophils, 7 per cent bands, and 49 per cent lymphocytes. The serum electrolytes were as follows: sodium 125 mEq./L.; CO₂ 17 mM./L.; chlorides 90 mEq./L.; and potassium 5.5 mEq./L.

After appropriate intravenous therapy, the patient recovered rapidly and was discharged four days after admission.

Comments: In contrast to the patient just previously discussed, this girl had developed hyponatremia secondary to hypodermoclysis with 5 per cent glucose in water. The hyponatremia may have been caused by a shift of sodium from the vascular space into the area of the salt-free subcutaneous fluids which had been administered on the two days prior to admission. The exact mechanism is unknown, of course, but if the tonicity of the fluids given was less than the tonicity of the serum, some electrolytes, including sodium, could have been drawn into the subcutaneous area so as to equalize the osmotic gradient.

DISCUSSION

Howland and Marriott,¹ Schloss and Stetson,² and others pointed out in the early part of this century that the intravenous route of fluid and

electrolyte administration is preferable to the subcutaneous route in pediatric patients with dehydration and acidosis occurring in diarrhea. They noted the more rapid correction of the acidosis, and recommended the intravenous method of fluid replacement as the one of choice. Schloss and Stetson² advised the use of a scalp vein if possible, but said that if necessary, a vein should be exposed by incision, or the injection should be made into the superior longitudinal sinus as described by Tobler³ and Helmholtz.⁴ Karelitz and Schick,⁵ in 1931, also noted that in cases of diarrhea in infants "the rapid improvement that followed intravenous therapy was not so evident when the fluid was injected subcutaneously or intraperitoneally."

Danowski, Winkler and Elkinton⁶ reported that if glucose solution is introduced subcutaneously, it may aggravate the salt deficit of diabetic coma. In studies with experimental animals and patients, they provided unequivocal proof that the subcutaneous injection of fluid that does not contain electrolyte may produce a form of salt depletion, with impairment of circulatory efficiency.⁷ Shock developed after a comparatively small hypodermoclysis.

Webb *et al.*⁸ measured thighs after hypodermoclysis of physiologic saline and noted that they did not return to normal for 16 hours, indicating that complete absorption took at least that length of time. When 5 per cent glucose in water or 5 per cent glucose in normal saline was used, the thigh girth did not return to normal size for 30 hours. By these studies they showed that the rates of absorption of subcutaneous fluids are surprisingly slow, and that this route alone is inadequate when fluid restoration is urgent. Webb's findings also indicated that in the presence of dehydration, subcutaneous absorption is not only slowed but retarded, even in the absence of the manifestations of circulatory impairment.

Abbott *et al.*,⁹ in a critical review of the literature up to 1952, cited the fallacies in using phenol-sulfonphthalein excretion in the urine as a measure of how rapidly or completely subcutaneous fluids are absorbed after the dye has been added to the fluid given by hypodermoclysis. This method of evaluating the efficacy of the absorption of subcutaneous fluids had been used by some investigators.^{10, 11} As the Abbott group stated, just the fact that the dye is absorbed does not necessarily indicate that the fluids and electrolytes administered subcutaneously are absorbed at the same rate. Abbott *et al.*, also suggested that the apparent successes reported by Weinstein¹¹ and by Shafiroff *et al.*,¹⁴ who had used protein hydrolysate and emulsified fat solutions, respectively, were for the most part due to the administration of only relatively small volumes of the solutions to healthy subjects.

The same authors felt that although hyaluron-

idase might alleviate the pain associated with hypodermoclysis, it might well intensify the undesirable effects by permitting large quantities of fluid to run into tissues very rapidly. That hyaluronidase added little to the desirability of hypodermoclysis was demonstrated in a normal 19-year-old patient. In this patient after hypodermoclysis of two liters of 5 per cent glucose in water with hyaluronidase added, the plasma volume decreased 21 per cent over a period of 6¼ hours. There was a fall in the blood pressure, and the pulse rate increased. When 10 per cent invert sugar was given in a similar manner, there was a reduction in plasma volume of 31 per cent.

Technically, subcutaneous fluids are infinitely more convenient to administer than intravenous fluids, and this no doubt is most commonly the reason for their use. As Sweeney¹³ has said, "Infants and small children, adults with thrombosed veins and patients in shock present a real problem when the intravenous route for parenteral therapy is attempted. Because of the great difficulty encountered in getting a needle into the veins of these patients, the doctor is tempted and frequently does give the parenteral fluid subcutaneously." Unfortunately these are the patients who are most in need of intravenous fluids and who are most harmed by subcutaneous fluid administration.

There is no possible way of knowing the tonicity or osmolality of the tissues that are injected with subcutaneous fluids. It is therefore impossible to predict how the extracellular fluid will behave in relation to the subcutaneous fluids administered. For example, there may be a shift of water into the site of the injection if the subcutaneous fluids are hypertonic in relation to the extracellular fluids. This shift of water, coming partially from the vascular space, may cause further cardiovascular collapse and electrolyte imbalance.

Also, it is impossible to know the exact concentration of electrolytes within the tissue where the fluids are to be injected. There is no way of predicting the manner in which the extracellular electrolytes will change in relation to the subcutaneous fluids. On the other hand, when serum electrolytes are obtained, these serve as a useful guide to the qualitative and quantitative administration of electrolytes. Likewise, the osmolality (milliosmols of solute per 1000 Gm. H₂O) of the serum, as determined by an osmometer, can provide invaluable information as to the tonicity of the dehydration and serve as a guide to the intravenous replacement fluids. In most hospitals, because of the prohibitive expense and technical problems, osmometers are not available. However, one can get a rough estimate of osmolality and osmolality (milliosmols of solute per liter of body fluid) by using a method recently described by Etteldorf and Sweeney.¹⁴

The time required for the absorption of subcu-

taneous fluid is a dangerous handicap. Infants and children with dehydration and electrolyte imbalance should not be subjected to the slow rate of absorption that is characteristic for fluids given by this route. Intravenous fluids have no time lag in their absorption and are preferable in this respect.

The space and volume available in infants for the subcutaneous administration of fluids severely limits the volume that can be given.

Blood and other colloids cannot be effectively administered by the subcutaneous route, and consequently hypovolemic shock cannot be managed by this technic.

Pain at the site of injection of the hypodermoclysis may be a problem mainly because of overdistention of the tissue.

Calories and protein, whether for maintenance or for repair, cannot be given in the required amounts by the subcutaneous route. Butler and Talbot,¹⁵ in 1944, pointed out the impracticality of "clysis" for caloric maintenance, stating that to accomplish this by hypodermoclysis without using hypertonic solutions or solutions devoid of electrolytes would necessitate giving excessive amounts of salt and water.

It is beyond the scope of this article to discuss the different regimens of intravenous-fluid therapy. Suffice it to say that for the reasons given above, any one of them is far superior to any method of hypodermoclysis.

SUMMARY

Four cases have been presented to illustrate the ineffectiveness and perils in the subcutaneous administration of fluids to infants or children. The literature concerning subcutaneous fluid administration has been briefly reviewed.

Dehydration, hypovolemic shock, and electrolyte and acid-base imbalances should not be

treated with subcutaneous fluids. Rather, the intravenous route should be used so as to avoid complications and decreased morbidity and mortality, and to bring homeostatic mechanisms back into balance more rapidly and effectively.

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Postgraduate Conference Schedule Set for '63-'64

Thirteen medical postgraduate conferences have been scheduled for the 1963-64 term at the S.U.I. College of Medicine. Monthly clinical conferences in ophthalmology also are scheduled for November through May.

The formal conferences include: Radiology, September 14-15; Pediatrics, September 18-19; Diagnostic Techniques in Office and Surgical Urology, October 11; Arthritis and Rheumatism, October 18-19; Nursing Institute on Labor and Delivery Room Problems, November 6-7; Surgery, December 3-4; Cardiac and Respiratory Disease Conference, December 6; Obstetrics and Gynecology, January 21-22; Refresher Course for the General Practitioner, February 18-21; Surgery, March 10-11; Infertility and Endocrinology, March 25; Iowa Eye Association, April 24-25; Adult and Child Neurology, May 13.

Detailed information on each conference—programs, speakers, registration fees, etc.—will be published in the issue of the JOURNAL which precedes the scheduled dates.

Survival Experience of Cancer Patients in Iowa

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A SURVEY OF CANCER morbidity in the State of Iowa was carried out in 1950 by the Iowa State Department of Health and the National Cancer Institute, with the cooperation of the Iowa State Medical Society. It enumerated all patients who were first diagnosed as having cancer in 1950 and who were residents of the State of Iowa at the time of diagnosis. The exact manner in which the data were collected and the results of that survey have been summarized in *CANCER MORBIDITY IN URBAN AND RURAL IOWA*.¹ In 1958, the original study was extended to determine the five-year survival experience of the Iowa residents who had been first diagnosed in 1950, and this report summarizes the findings in that follow-up study.

Originally, there were 9,088 resident cancer cases first diagnosed in 1950, but not all of the patients were available for follow-up. Not included are 890 individuals who were originally discovered from death certificates, and 65 people whose records were withdrawn on follow-up because their lesions were found to be non-malignant, because they were not residents of Iowa, because duplicate entries had been made, or because their cases had been diagnosed prior to the study year. It was also necessary to exclude 1,599 cases which had been identified originally by phonetic code numbers rather than by surnames, and therefore could not be followed. There remained, then, 6,534 cases available for follow-up, and these constituted the basis for this report.

Follow-up data for this study were collected as follows. First, the names of all cancer patients involved were checked against the records of the Division of Vital Statistics for the period 1950-

1957. For each individual not matched in the search of mortality records, an inquiry was made of the physician or hospital that originally reported the case in 1950. The information requested included the date on which the patient was last seen, the date on which the patient was last known to be alive, his or her cancer status at the last contact, and the date, place and cause of death if he or she was known to be dead. For those patients not observed for a full five years (or not known to be dead), requests were made for the names of other physicians or hospitals that the patient might afterward have asked for help. Replies were received from over 95 per cent of the physicians and hospitals from whom information was sought.

Other sources of follow-up data were consulted. These included postal records, records of the State Motor Vehicle Bureau and city directories. Further, the Division of Public Health Nursing of the State Department of Health provided follow-up information on patients known to its personnel. Patients were not contacted directly. Throughout the checking of postal records and Motor Vehicle Bureau records, great care was taken to make sure that the real purpose of the search was not divulged and that the confidential nature of the data was maintained.

At this point, those patients whose vital status as of December 31, 1955, remained unknown were again checked through the mortality records of the State Division of Vital Statistics. Patients not matched or followed were then considered lost to follow-up. The results are summarized in Tables 1 and 2.

It should be noted that this study was extremely successful from the point of view of minimizing losses to follow-up. Only 3.2 per cent of the entire group available for follow-up were not followed to death or for the full five years. This rate compares very favorably with the comparable rates in continuing cancer case registries such as Connecticut's, where five per cent of the cases diagnosed through 1951 were lost to follow-up.² A recent report by the End Results Group, relating the combined experience of four central and 10 individual hospital tumor registries with a broad geographic distribution, likewise indicates losses

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TABLE 1

NUMBER OF CASES OF CANCER AVAILABLE FOR FOLLOW-UP AND RESULTS OF FOLLOW-UP BY SEX, FOR IOWA RESIDENTS; CASES FIRST DIAGNOSED IN 1950 AND REPORTED IN IOWA CANCER MORBIDITY STUDY

	Total	Male	Female
First diagnosed in study year ^{1, 2} . . .	8133	3964	4169
Cases identified only by Soundex ³	1599	701	898
Available for follow-up			
Number	6534	3263	3271
Per cent	80.3	82.3	78.5
Followed to death or for full five years	6325	3153	3172
Lost to follow-up:			
Number	209	110	99
Per cent	3.2	3.4	3.0
Followed less than one year	158	80	78
Followed one year, less than two . .	22	15	7
Followed two years, less than five . .	29	15	14

¹ Excludes cases obtained from death certificate only

² Excludes cases withdrawn on follow-up after having been found to be non-malignant, non-resident, duplicate or diagnosed prior to study year

³ No surname available—could not be followed

to follow-up of about five per cent in the first five years.³

METHOD OF COMPUTING SURVIVAL RATES

The survival rates presented herein were computed by the actuarial or life-table method, which makes use of all the available follow-up information. Cases not followed to death or for a full five years are removed from observation during the follow-up interval in which the last contact was made. A complete discussion of the mechanics of computing survival rates by the life-table method has been published by Cutler and Ederer⁴ and by Merrell and Shulman.⁵

The crude survival rate—i.e., the proportion of patients surviving a specified interval of time—takes account of information on all causes of death. The disadvantages of using a distribution of specific causes of death are well known.⁶ Most cancer patients are past middle age, and there is a considerable risk of their dying from other causes, and any analysis of their survival experience should adjust for this risk. This is especially important when one compares patient groups that differ with respect to factors such as age, sex, and race which are associated with different mortality risks. The relative survival rate—i.e., the ratio of the observed survival to the survival that would have been expected if the cancer population under consideration—provides a means of adjusting for expected mortality from causes other than cancer without requiring information on causes of death. A complete discussion of the interpretation of the relative survival rate may be found in Cutler *et al.*,^{7, 8} and in Ederer *et al.*⁶

TABLE 2

NUMBER OF RESIDENT CASES OF CANCER AVAILABLE FOR FOLLOW-UP AND PER CENT LOST TO FOLLOW-UP BY PRIMARY SITE AND SEX FOR IOWA RESIDENTS; CASES FIRST DIAGNOSED IN 1950 AND REPORTED IN IOWA CANCER MORBIDITY STUDY

Primary Site	International List Number ¹	Number of Cases	Per cent Lost to Follow-up
Buccal cavity and pharynx	141-148	346	6.9
Lip	140	160	9.4
Tongue	141	27	7.4
Esophagus	150	43	0
Stomach	151	428	1.2
Large Intestine	153	526	1.7
Rectum	154	287	1.4
Pancreas	157	156	0.6
Lung and bronchus . . .	162	304	2.0
Larynx	161	28	0
Breast ²	170	759	2.9
Uterus	171, 172 173, 174	601	3.5
Cervix	171	360	2.8
Corpus	172	127	3.9
Ovary	175	161	2.5
Prostate	177	397	1.8
Kidney	180	84	2.4
Bladder	181	254	2.4
Skin	190-191	966	7.1
Brain and nervous system	193	93	1.1
Thyroid	194	41	4.9
Leukemia	204	201	2.0
Lymphoma	200, 201, 202, 203, 205	201	2.5

¹ Sixth Revision

² Female only

In this paper, both crude and relative survival rates are presented. The expected rates used in computing the relative survival rates have been developed by means of the Iowa State Life Tables for 1949-1951. A detailed methodology for computing expected rates may be found in Ederer *et al.*⁶

RESULTS

Patients included in this study have been classified according to a number of characteristics which have a bearing on survival. In addition to age, sex and primary site, the stage of disease at the time of diagnosis has been determined. The classification by stage is necessarily crude because no detailed criteria for staging for specific sites had

figure 1. Observed & Expected Survival Rates by Stage of Disease at Diagnosis, All Sites Except Leukemia, State of Iowa, Cases Diagnosed in 1950

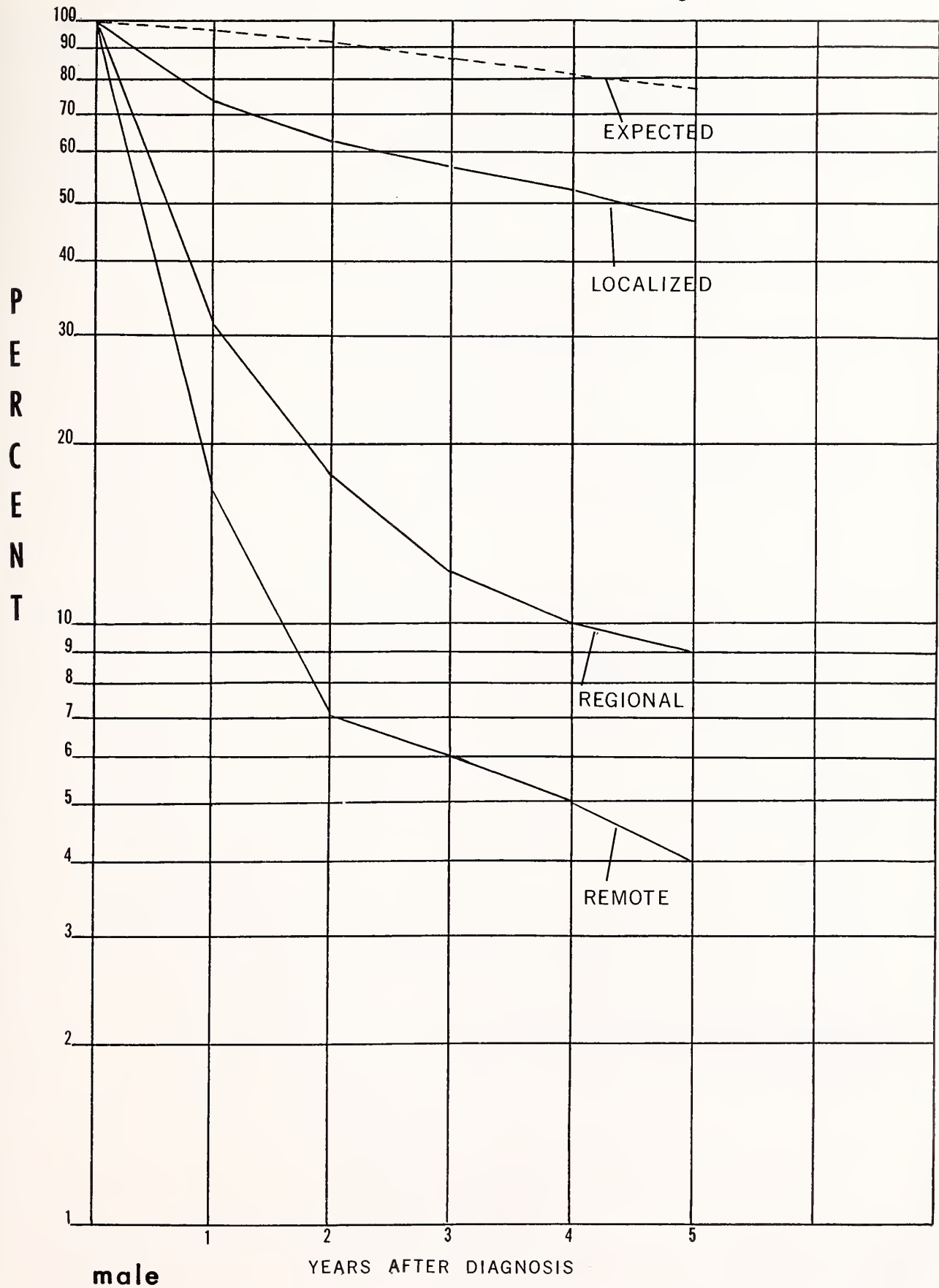


figure 1. Observed & Expected Survival Rates by Stage of Disease at Diagnosis ,
All Sites Except Leukemia, State of Iowa, Cases Diagnosed in 1950

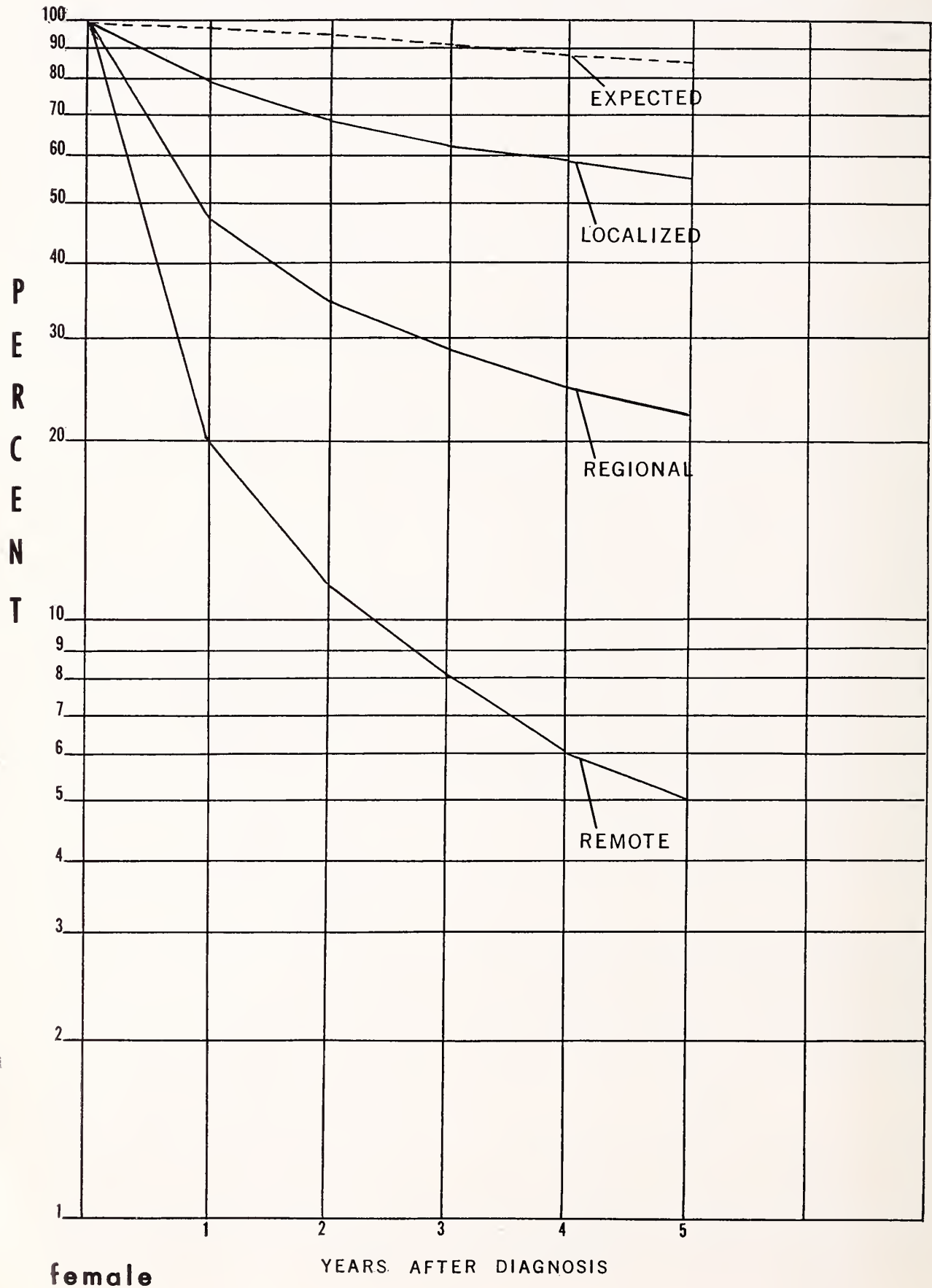
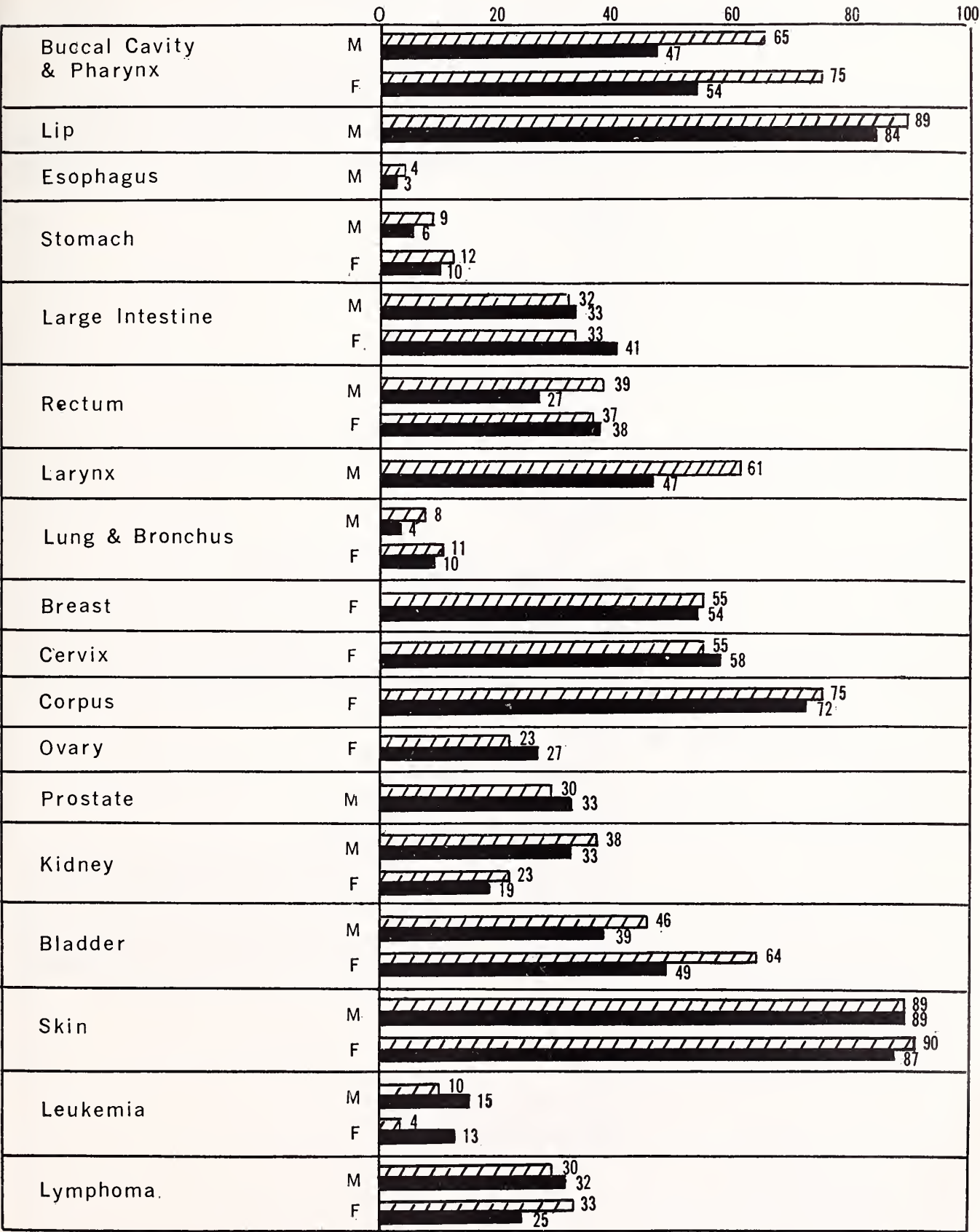


figure 2. RELATIVE 5—YEAR CANCER SURVIVAL RATES FOR IOWA AND CONNECTICUT BY PRIMARY SITE AND SEX





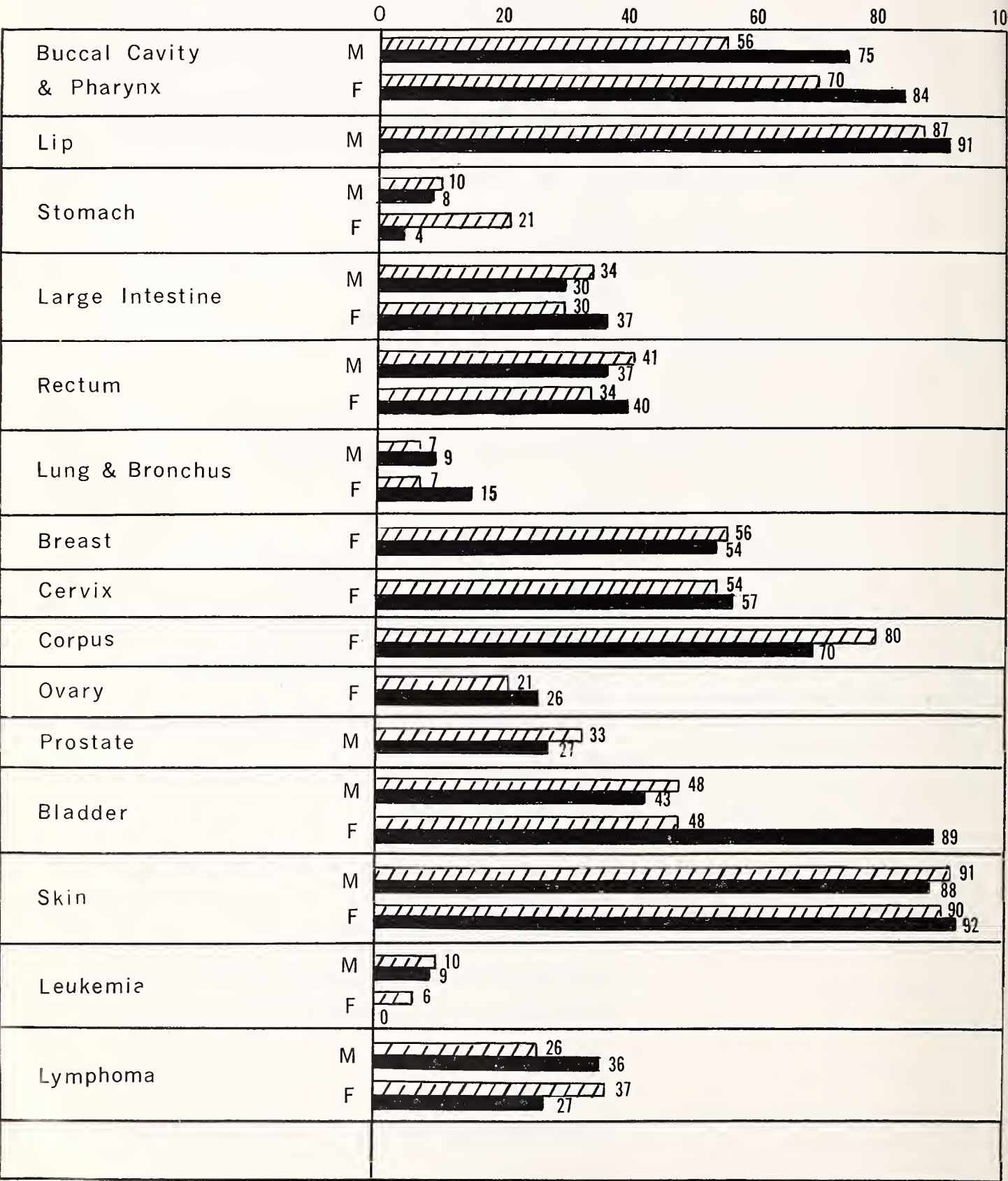
legend — (Males M) (Females F) IOWA  CONNECTICUT 

figure 3. RELATIVE 5-YEAR CANCER SURVIVAL RATES FOR URBAN & RURAL IOWA BY PRIMARY SITE & SEX




legend — (Males M) (Females F) URBAN  RURAL 

TABLE 3

FIVE-YEAR SURVIVAL RATES (PER CENT) BY SEX, PRIMARY SITE AND STAGE OF DISEASE FOR URBAN AND RURAL RESIDENTS; CASES FIRST DIAGNOSED IN 1950 AND REPORTED IN IOWA CANCER MORBIDITY STUDY

Primary site, Stage	MALES						
	International List ¹ Number	Total		Urban		Rural	
		Observed Rate	Relative Rate	Observed Rate	Relative Rate	Observed Rate	Relative Rate
Buccal cavity and pharynx	140-148						
All stages		52	65	44	56	60	75
Localized		62	77	59	73	66	81
Lip	140						
All stages		73	89	69	87	76	91
Localized		75	93	75	95	76	91
Tongue	141						
All stages . . . . .		..²	..	..	..	..	..
Localized . . . . .		..	..	..	..	..	..
Esophagus	150						
All stages		3	4	..	..	..	..
Localized . . . . .		..	..	..	..	..	..
Stomach	151						
All stages		6	9	7	10	5	8
Localized		12	17	12	16	12	17
Large Intestine	153						
All stages		24	32	26	34	22	30
Localized		39	51	46	61	32	42
Rectum	154						
All stages		31	39	34	41	28	37
Localized		42	52	44	53	40	52
Brain and nervous system	193						
All stages		16	17	11	12	..	..
Localized		14	15	..	..	..	..
Thyroid	194						
All stages . . . . .		..	..	..	..	..	..
Localized . . . . .		..	..	..	..	..	..
Leukemia	204						
All stages		9	10	9	10	8	9
Lymphoma	200, 201						
All stages	202, 203, 205	27	30	24	26	31	36
Localized . . . . .		..	..	..	..	..	..
Pancreas	157						
All stages		1	1	0	0	3	3
Localized . . . . .		..	..	..	..	..	..
Lungs and bronchus	162						
All stages		6	8	6	7	8	9
Localized		9	11	10	12	..	..
Larynx	161						
All stages		52	61	..	..	..	..
Localized . . . . .		..	..	..	..	..	..
Prostate	177						
All stages		20	30	22	33	18	27
Localized		26	37	27	41	24	34
Kidney	180						
All stages		32	38	26	32	..	..
Localized . . . . .		..	..	..	..	..	..
Bladder	181						
All stages		35	46	37	48	32	43
Localized		40	53	44	57	35	47

¹ Sixth Revision

² Rates based on less than 25 cases are not shown.

FEMALES							
Primary site, Stage	International List ¹ Number	Total		Urban		Rural	
		Observed Rate	Relative Rate	Observed Rate	Relative Rate	Observed Rate	Relative Rate
Skin	190-191						
All stages		69	89	71	91	67	88
Localized		71	92	74	94	69	90
Buccal cavity and pharynx	140-148						
All stages		65	75	60	70	..	..
Localized		61	72	..	..	..	..
Lip	140						
All stages .....		..²	..	..	..	..	..
Localized .....		..	..	..	..	..	..
Tongue	141						
All stages .....		..	..	..	..	..	..
Localized .....		..	..	..	..	..	..
Esophagus	150						
All stages .....		..	..	..	..	..	..
Localized .....		..	..	..	..	..	..
Stomach	151						
All stages		9	12	16	21	3	4
Localized		20	26	..	..	..	..
Large Intestine	153						
All stages		26	33	24	30	30	37
Localized		47	56	45	53	50	59
Rectum	154						
All stages		31	37	29	34	33	40
Localized		50	58	54	60	47	56
Pancreas	157						
All stages		10	12	10	13	..	..
Localized .....		..	..	..	..	..	..
Lung and bronchus	162						
All stages		9	11	6	7	13	15
Localized		12	14	..	..	..	..
Larynx	161						
All stages .....		..	..	..	..	..	..
Localized .....		..	..	..	..	..	..
Breast	170						
All stages		48	55	48	56	47	54
Localized		63	72	63	73	62	71
Uterus	171, 172, 173, 174						
All stages		52	58	52	58	52	57
Localized		60	66	60	67	60	65
Cervix	171						
All stages		50	55	49	54	53	57
Localized		55	60	54	59	58	61
Corpus	172						
All stages		66	75	69	80	63	70
Localized		72	81	77	88	68	75
Ovary	175						
All stages		21	23	18	21	24	26
Localized		33	36	37	41	27	29
Kidney	180						
All stages		21	23	..	..	..	..
Localized .....		..	..	..	..	..	..
Bladder	181						
All stages		50	64	36	48	..	..
Localized		59	75	..	..	..	..
Skin	190, 191						
All stages		73	90	74	90	73	92
Localized		78	96	78	96	77	96

FEMALES (Continued)							
Primary site, Stage	International List ¹ Number	Total		Urban		Rural	
		Observed Rate	Relative Rate	Observed Rate	Relative Rate	Observed Rate	Relative Rate
Brain and nervous system	193						
All stages		20	21	..	..	..	..
Localized . . . . .		..	..	..	..	..	..
Thyroid	194						
All stages		72	78	..	..	..	..
Localized . . . . .		..	..	..	..	..	..
Leukemia	204						
All stages		4	4	6	6	0	0
Lymphoma	200, 201, 202, 203, 205						
All stages		29	33	34	37	24	27
Localized . . . . .		..	..	..	..	..	..

¹ Sixth Revision
² Rates based on less than 25 cases are not shown.

been developed in 1951, when the initial study was carried out. The single system of classifying the extent of neoplastic spread used for all forms of cancer in this study is as follows:

- 1. *Localized*—The neoplasm is confined to the site of origin.
- 2. *Regional involvement*—The neoplasm has metastasized to local lymph nodes or has extended into adjacent tissues.
- 3. *Remote metastasis*—The neoplasm has invaded another organ, has spread to a distant part of the body, or is diffused throughout the body.

Residence at time of diagnosis also was determined, and the classification of patients as urban or rural residents enables us to consider the effect, if any, that residence has on survival. The definitions of *urban* and *rural* which have been used conform to the "old" definition of the 1950 Census of Population; *urban* covers all persons residing in incorporated places of 2,500 or more inhabitants and in certain other political subdivisions classified as urban under special rules relating to population size and density.

The pattern of five-year survival by stage for all sites except leukemia is shown in Figure 1. As expected, survival rates in the early years after diagnosis indicate a greatly increased mortality risk for patients with metastatic disease. Among males, the first year's annual survival ratio—i.e., the ratio of observed to expected survival rates—for regional and remote metastases was .32 and .17 respectively, compared with .80 for patients with localized disease. Among females, the ratios for the first year were .48 and .21 for regional and remote cases as compared with .81 for localized. By the fifth year, the relative annual survival rates were approaching 1.0, but had not reached that level. That is, for all sites combined, there still appears to be an excess mortality risk for the cancer population after five years, even among patients diagnosed while the lesions were localized.

The five-year survival results observed in Iowa are typical of those encountered in similar series. Figure 2 gives the five-year relative survival rates by primary site for Iowa and Connecticut. The Connecticut results are for cases diagnosed during the period 1947-1951, and correspond temporally with the Iowa data.² The reader should be cautioned, however, that here and throughout this paper he should avoid reading great significance into differences of no more than two or three percentage points. In general, the number of sites for which Iowans appear to have better survival rates is not much different from the number for which Connecticut residents' rates are higher.

A comparison with the Connecticut experience indicates that among males, the survival rates in Iowa are somewhat higher except for cancer of the large intestine, prostate, and brain and nervous system, and for leukemia and lymphoma. Among females, the Iowa rates are lower for cancer of the large intestine, rectum, cervix, ovary, and brain and nervous system, and for leukemia.

The five-year relative survival rates in Iowa for cancer of the buccal cavity (65 per cent for males and 75 per cent for females) are relatively high compared with the Connecticut rates (47 per cent and 54 per cent for males and females respectively). It is likely, however that among males the buccal cavity and pharynx figures for Iowa include a fair number of cases of skin of the lip. That is, the incidence of cancer of the buccal cavity in Iowa has been shown to be considerably higher than for comparable series in New York and Connecticut.⁹ Further, the excess seems concentrated in cancer of the lip. Survival rates for cases of the buccal cavity and pharynx excluding the lip are 37 and 73 per cent for males and females, respectively. The rate for males excluding cancer of the lip is more in line with Connecticut's and would support the contention that buccal cavity and pharynx cancers in the Iowa statistics include

some cases of skin of the lip. However, the rate for females remains considerably higher even when cancer of the lip is excluded.

It is worthwhile to reiterate that such results as are available for specific primary sites from other series¹⁰ as well as those for Connecticut emphasize the fact that five-year survival rates in Iowa are typical of the results generally observed.

Five-year survival rates by primary site and sex for both urban and rural Iowa are presented in Table 3. Rates based on fewer than 25 cases have been omitted because rates based on so few cases tend to be unreliable. Data on patients with clinical diagnoses only have been combined with data on patients for whom microscopic confirmation was available. It has been noted that survival rates for clinically diagnosed cases in this and in other studies¹¹ are considerably lower than for microscopically-confirmed cases. The following are typical of the Iowa data:

TABLE 4
TYPICAL IOWA DATA

	5-Year Relative Survival Rate (per cent)	
	Confirmed only	Confirmed plus Not-Confirmed
Stomach		
Male	11	9
Female	14	12
Large Intestine		
Male	41	32
Female	41	33
Rectum		
Male	44	39
Female	39	37
Cervix	55	55
Corpus	76	75
Prostate	35	23

It has been suggested that the lower rates among the microscopically-confirmed cases imply that this group includes many patients for whom biopsy was considered either medically inadvisable or unnecessary.¹¹ Reliance on all diagnosed cases, whether microscopically confirmed or not, gives an accurate portrayal of the situation, and the inferences based on all diagnosed cases are not different from those which would be drawn if the clinically diagnosed cases were excluded.

There are no striking sex differences among the five-year survival rates for the sites in the digestive system, with the exception of cancer of the pancreas. Prognosis is generally poor for such sites as esophagus and stomach, although rates are somewhat higher for females.

Survival rates for females are also somewhat higher for cancer of the lung, bladder, and brain

and nervous system, and for lymphomas. Males have a somewhat better survival experience for cancer of the kidney and for leukemias.

Again it should be noted that the Iowa data generally show the same relationship of sex to survival that has been noted in other series.

URBAN-RURAL DIFFERENTIALS

The urban-rural differentials in survival have been summarized in Figure 3. Among both males and females, the sites are nearly evenly divided between higher urban survival and higher rural survival. Differences were tested for statistical significance at the 5 per cent probability level. Chance factors alone may produce some results apparently out of the ordinary in a large number of comparisons. The 33 differences tested could be expected to yield, on the average, two differences which meet the 5 per cent test criterion in the absence of a true urban-rural difference. In fact, only four significant differences were found.

Among males, both buccal cavity and pharynx and pancreas have statistically significant differences at the 5 per cent probability level. The urban-rural differentials for both buccal cavity and pharynx and pancreas remain when survival by stage at diagnosis is considered. However, the difference for cancer of the buccal cavity and pharynx is no longer statistically significant when cancer of the lip is excluded, as was suggested earlier.

Among females, the most striking urban-rural difference is that for cancer of the stomach, where the urban survival rate is five times greater than the rural rate. Most of this difference appears to be found among cases classified as "stage localized or unknown." However, survival rates by stage of disease are based upon a relatively few cases and are subject to rather large variations. One cannot dismiss the possibility that the urban-rural differential for female stomach cancer is a real one. Further study would be required to determine whether the accumulation of a larger series of cases would wipe out the observed differential.

The urban-rural difference for bladder cancer among females can be noted among localized cases as well as in all stages. Though the numbers of cases are small, the results by stage of disease are consistent with the contention that a real difference exists between urban and rural survivals for patients with cancer at this site.

DISCUSSION

The five-year survival rates presented in this paper serve to emphasize the typical nature of the Iowa results. It has been observed that females experience somewhat better five-year survival than males. In general, however, there remains an excess mortality from cancer after five years even among cases diagnosed while localized. Certain sites, namely esophagus, pancreas, lung and bron-

chus, brain and nervous system, and leukemia offer particularly poor five-year prognoses. Similar findings have been observed in other studies of large population groups such as in Connecticut¹² and the studies of the End Results Evaluation Section of the National Cancer Institute.¹⁰

As has been previously reported, observers familiar with medical practice in Iowa are convinced that rural residents have access to medical care of the same quality as that which is available to city residents.¹ This impression was fortified by the survey findings of the 1950 study of cancer morbidity in urban and rural Iowa. The apparent similarity in survival for those treated in urban as opposed to those treated in rural areas again tends to support the impression of the similarity of medical care in the two parts of the State. Further, the rates observed here leave unshaken the presumption that previously-observed differences in urban-rural incidence and mortality represent the operation of real forces and not merely a diagnostic artifact.

There are important methodologic implications in the manner in which this study was carried out. The fact that a highly successful follow-up was achieved many years after the patients involved were first enumerated indicates that Iowa has important resources and facilities for the long-term tracing of patients. It seems apparent that these advantages should be capitalized upon in terms of studies of the etiology and results of treatment of cancer.

Of course, the success of a study such as the one presented here depends upon full cooperation from the medical community. The excellent re-

sults of follow-up achieved in this study were due primarily to the heartening response of the physicians of Iowa. We should like to acknowledge their cooperation.

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Lateral-Neck Tumors in Children

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SEVERAL TIMES each week, in his office practice, the clinician is called upon to evaluate a neck mass in a child. The character of such a lesion may be obvious, but some cervical tumors are difficult to define with certainty. Thus a swelling in the neck can constitute a challenging problem, and arriving at a final decision may require the combined efforts of a surgeon, a radiologist and a pathologist, along with those of the general prac-

itioner or internist. This team effort can be indispensable in making the correct diagnosis, and often a group consultation is essential to the selection of the proper treatment.

This presentation will review the more important conditions to be considered in the examination of a child with a mass in the lateral neck. A complete list of such conditions will not be attempted, and there are several anterior-neck swellings, produced by thyroid tumors or thyroglossal duct cysts, which frequently extend into the lateral neck.

CERVICAL TUMORS OF LYMPH-NODE ORIGIN

By far the most common cause of lateral-neck

swellings in children is the enlargement of cervical nodes secondary to benign inflammations or infections. Acute upper-respiratory and throat infections most commonly have involved the tonsillar glands in the digastric triangles. Pyogenic infections usually lead to no more than moderate enlargement and tenderness of the involved area. Virulent organisms, however, may break down the glands and form abscesses that require incision and drainage. In the past, deep cervical abscesses were a serious entity, but the use of antibiotics in recent years has reduced their importance.

Tuberculosis involving the cervical nodes, since it is more slowly progressive, can be differentiated from the pyogenic infections. Tuberculous nodes are large, fused and matted together, and generally display very little local reaction. When tuberculosis is suspected, incision and drainage should be avoided so as to prevent the formation of a persistent sinus.

German measles, among other childhood communicable diseases, involves the posterior cervical chain of lymph nodes, but the enlargement subsides soon after the rash disappears.

Infectious mononucleosis is seen more often in young adults, but it occurs with some frequency in children. This generalized infection is accompanied by enlargements of cervical nodes as well as generalized lymphadenopathy and splenomegaly. Atypical lymphocytes in the peripheral blood and a positive heterophile agglutination test establish the diagnosis.

Cat-scratch disease is an important entity in this age group because of the frequency of children's contacts with cats. The diagnosis is established by a history of contact with cats, by regional lymphadenopathy and by a positive intradermal skin test.

Metastasis from a carcinoma or sarcoma may present as a lateral-neck tumor. Carcinomatous nodes are usually rock-hard, whereas sarcomatous nodes are firm but not so hard. Neck cancer is a hundred times less frequent in children than in adults,² and often the appearance of the mass is the first indication that a neoplastic tumor is present. A careful search often reveals the primary source, but biopsy and histologic examination constitute the absolute means for establishing the diagnosis.

Lymphoid tumors with neck manifestations include Hodgkin's disease, lymphosarcoma and leukemia. The nodes of these lymphomas are firm, discrete, non-tender and non-suppurative. Bone-marrow, blood and roentgenographic studies may establish the diagnosis, but surgical biopsy of an enlarged lymph node is often necessary.

CERVICAL TUMORS NOT OF LYMPH-NODE ORIGIN

Tumors of the skin and subcutaneous tissue include warts, melanomas, moles, lipomas, fibromas and sebaceous cysts. Because these tumors are

not attached to the underlying structures, they are freely movable. In this category lipomas are the most common, and the cervical region is the most common site of their occurrence. Lipomas grow slowly and cause few symptoms. Sebaceous cysts may become inflamed, and they enlarge, thereby requiring incision and drainage. Caution should be exercised in the drainage of neck infections, for there may be a communication between the lesion and a salivary gland, and a fistula may result.

Congenital cystic hygroma is the most common lateral-neck tumor in young infants. This tumor is a multilocular cystic mass that varies in diameter from 5 to 15 cm. It appears as a soft, irregular mass above the clavicle and along the lateral border and behind the sternocleidomastoid muscle.

Branchial-cleft cysts are generally 2 to 6 cm. in diameter, are more tense and feel solid when compared with the soft, irregular cystic hygromas. A sinus from the cyst to the skin is often present. Drainage, if any, usually is intermittent, and may be associated with varying degrees of infection in the cyst. The only other common draining lateral sinus is secondary to tuberculous adenitis.

Dermoid cysts may be located in the lateral cervical region. Usually they are non-tender and show little tendency to sinus formation. These cysts exhibit a characteristic x-ray appearance, having demonstrable teeth or skeletal elements, as do many of the teratomas with which they are closely related.

Salivary-gland tumors, though uncommon in children, may be either benign or malignant. The benign mixed tumor is the commonest neoplasm, and it occurs most frequently in the parotid gland. Usually the parotid tumor is not hard to diagnose, but peripherally located tumors in the gland can be confused with cervical lymphadenopathy and inclusion cysts. Differentiating mumps from cervical adenopathy frequently presents a diagnostic challenge.

Hemangiomas may occur in any portion of the body, but over 50 per cent of them occur in the head and neck.³ Cavernous hemangiomas generally are soft, compressible, painless tumors, usually with discolored, bluish skin overlying them. They may be small and asymptomatic, or they may be large, involving the entire side of the neck and head. In the pulsating hemangiomas, large arterial fistulae are present, and a palpable thrill and an audible bruit may be present. Other vascular tumors such as aneurysms and arteriovenous fistulae are rare in children. Hematomas of the neck are generally traumatic, and usually are not difficult to recognize.

Esophageal diverticula are uncommon in children. Most often a mass presents itself on the left side of the neck, anterior to the sternocleidomastoid muscle. Dysphagia and regurgitation are usually the first symptoms to attract attention.

Chondromas, several neurogenic tumors, parathyroid tumors, osteomas and various other rare tumors may present in the lateral neck during childhood. These rare lesions have variable characteristics, and surgical biopsy is almost always required to establish the diagnosis.

The clinical diagnosis of lesions of the neck can be highly accurate in many instances, if the physician keeps in mind the wide range of possibilities, including the rare lesions that can occur in this anatomic region. Points of the history should be properly weighed, and a careful evaluation of the tumor should be made by inspection, palpation and auscultation before a clinical impression is formed. However, even with meticulous analysis of the patient's history, a careful physical examination and essential laboratory aids, the clinical impression may be incorrect. The final decision in these cases must await excision or aspiration biopsy.

The following case shows that the surgeon and the pathologist sometimes must answer the question, after all of the historical facts, physical findings and laboratory aids have failed to do so.

CASE REPORT

A 12-year-old girl was first seen in the physician's office on August 20, 1961. Her chief complaint was a non-tender lump on the right side of her neck of about four weeks' duration. Antibiotics had resolved an attack of tonsillitis two months previously.

Physical examination revealed a 2.5 cm. firm mass in the digastric triangle on the right side of her neck, near the angle of her jaw. The mass was non-tender and well circumscribed. There were several non-tender nodes in the right posterior cervical chain. No other masses were noted during the neck examination. The head and EENT examinations were negative. The chest was clear to auscultation and percussion. No other nodes were palpable, and the remaining portions of the complete physical examination were normal. The chest x-ray was normal.

At three-week intervals for the next four months, the patient was reexamined in the physician's office, but there was no notable change in the tumor, and the posterior cervical nodes remained palpably unchanged. No treatment was instituted during that four-month period.

The initial impression of chronic cervical lymphadenitis was established as a preoperative diagnosis, and a surgical biopsy was planned. Under general anesthesia, at Ellsworth Memorial Hospital on December 21, 1961, a small incision was made over the mass, and a well-circumscribed, encapsulated, yellowish tumor was excised. Frozen and microscopic sections revealed it to be a mixed tumor of the parotid gland.

At surgery, there were no attachments of this

tumor to the parotid or submaxillary gland, and no other abnormalities were noted in the structures of the digastric triangle. Postoperatively, the patient's course was uneventful, and the wound healed *per primum*. At eleven months postoperatively, the patient showed no evidence of recurrence.

In parotid tumor cases, the presence of a lump in the neck is the usual reason for the patients' seeking medical attention, as it was in this instance. Sometimes there are pain and tenderness associated with the lump. Usually, however, the tumor has been present for periods of from one to three years, but its growth has been so slow that the child's parents haven't bothered to have it investigated. Neoplastic involvement of the parotid gland in children is rare, but the mixed tumor is the most common one occurring in the salivary glands. In Marshall's series of 213 cases of mixed tumors of the salivary gland, not one patient was under the age of 15 years.⁴ In a review of 2,309 cases, Howard⁵ reported a less than 3 per cent incidence of salivary gland mixed tumors in children.

A lesion may be difficult to diagnose because it is of a type that occurs only rarely, because its location is abnormal or because it has occurred in a region of the neck where there are many diagnostic possibilities. Therefore, even the most astute examiner is not infallible. Each neck tumor in children is a challenge, and to meet that challenge the physician must have the aids of history, physical examination and laboratory tests at his disposal. The diagnosis is never a certainty, however, until an adequate histologic study has been carried out.

SUMMARY

The more important conditions that may cause a lateral-neck tumor in children have been reviewed. The diagnosis, in many cases, requires histologic identification.

A case of an infrequent mixed tumor of the parotid gland in a 12-year-old girl has been reported. Surgical excision of the tumor was required for a positive diagnosis, after history-taking, physical examination and laboratory procedures had failed to establish it.

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Correlation of Information Through Drawings

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DRAWINGS CAN communicate particular ideas and pieces of information, and can correlate them as well. Important relationships can be shown to exist between (1) basic and medical sciences, (2) medical science and medical practice, (3) art and science, and (4) the scientific specialties.

New developments in the basic sciences often have applications to the problems of medical science, and the subsequent utilization of this knowledge often benefits the ill. Ultimately, then, the patient benefits from the communication that should and does exist between the basic and the medical sciences.

The visual part of this communication is my concern. Medical and scientific artists have exciting opportunities when they are called upon to record and communicate new relationships that have been found to exist between man and his environment. They have played an important and, I think, a largely satisfactory role in the work of medical clinicians and researchers. No matter how specialized information may become, new ideas in medical science can almost always be put into visual form to ease communication. A new kind of effectiveness may be found in the ability of the artist to correlate data, both so that what the specialist knows can be communicated to a select group and so that it can be understood by people outside of his specialty. Visual artists can put windows in the blockades—the separate vocabularies—that separate the various scientific disciplines.

The drawings in Figure 1 indicate an interesting relationship between energy and matter. Energy (A1, 2 and 3) and structures (C1 and 2) are shown as they might be thought of separately. The action of energy on structures is depicted in B1 and 2. The artist's imagination can be put to

good use as the medical study of the eye or the ear, for instance, becomes a study not only for the anatomist and pathologist, but increasingly for the physicist, and chemist, the electronics specialist, the mathematician, the microscopist and sub-microscopist, the physiologist and others.

In Figure 2, common visual principles that make up the universal visual language are put to use in depicting relationships between seemingly unrelated items of knowledge.

Making drawings of very particular information (Figure 3) will show that relationships exist between the specialties.

Similar drawings (Figure 4) result from (A) scientific investigation and interpretation by the investigator, and (B) artistic imagination and intuition. (See "Wittkower" below.)

There are recurring forms in nature that are fascinating to artists (Figure 5), and they may represent them solely for their own satisfaction. When scientists see these drawings, they often relate them to their specialized knowledge. Science encounters more and more nearly ideal or universal forms as it approaches infinity in both directions—the very small and the very large. Eventually, these forms are revealed as the bases from which artists, after seeing their variants in nature, have made beautiful drawings and paintings. An artist, for example, might use similar lines to portray an ear membrane in motion and a splash on a body of water; a free magnetic field and a lily; a protein molecule and a seashell; the direction of pull of the muscles in the human iris and sunflower seeds in place. I made the drawings in Figure 5 for my own satisfaction, but they were later pointed out as being analogous to natural phenomena already noted by scientists.

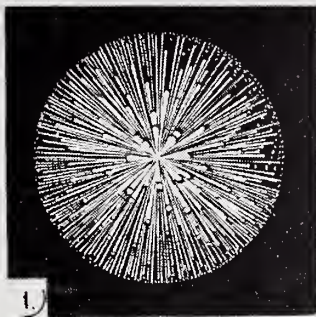
Wittkower* says Leonardo da Vinci believed that nature is governed by reason, by mathematical laws that can never be broken, and that nature, our great teacher, is beautiful because necessity and law in nature are based on proportion and harmony. The predetermined harmony in all matter is truth, because the certainty of mathematics is truth. *It follows that beauty—the eternal beauty in and behind nature—as much concerns the artist as the scientist. Art cannot be art if it is*

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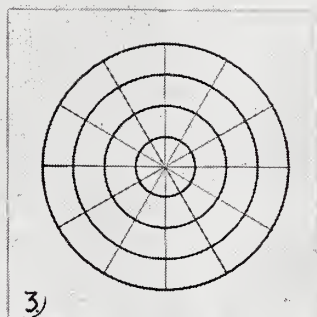
* From La Page, Geoffrey: ART AND THE SCIENTIST, 1960.

Figure I

A



1) These emphasize that the rays emit in all directions. (amplitude?)



3) This emphasizes the pulsation or waves of the radiation. (frequency?)

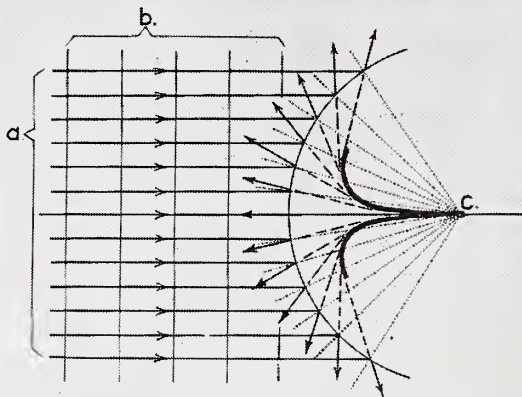
ENERGY EMITTING FROM A POINT SOURCE SHOWN AS A SEPARATE IDEA

B

ENERGY AND STRUCTURES SHOWN AS THEY MIGHT BE THOUGHT OF TOGETHER

1)

Both the direction a) and the pulsation b) of the energy (light) as it approaches the mirror (lens) is indicated here. The light is refracted in such a way that a conical image to the left of c) is formed.



2)

This indicates reaction to a point stimulus of a membrane such as the basilar membrane of the inner ear.

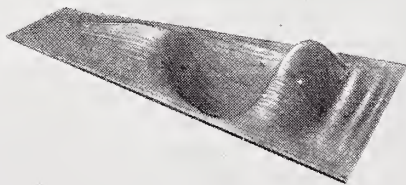
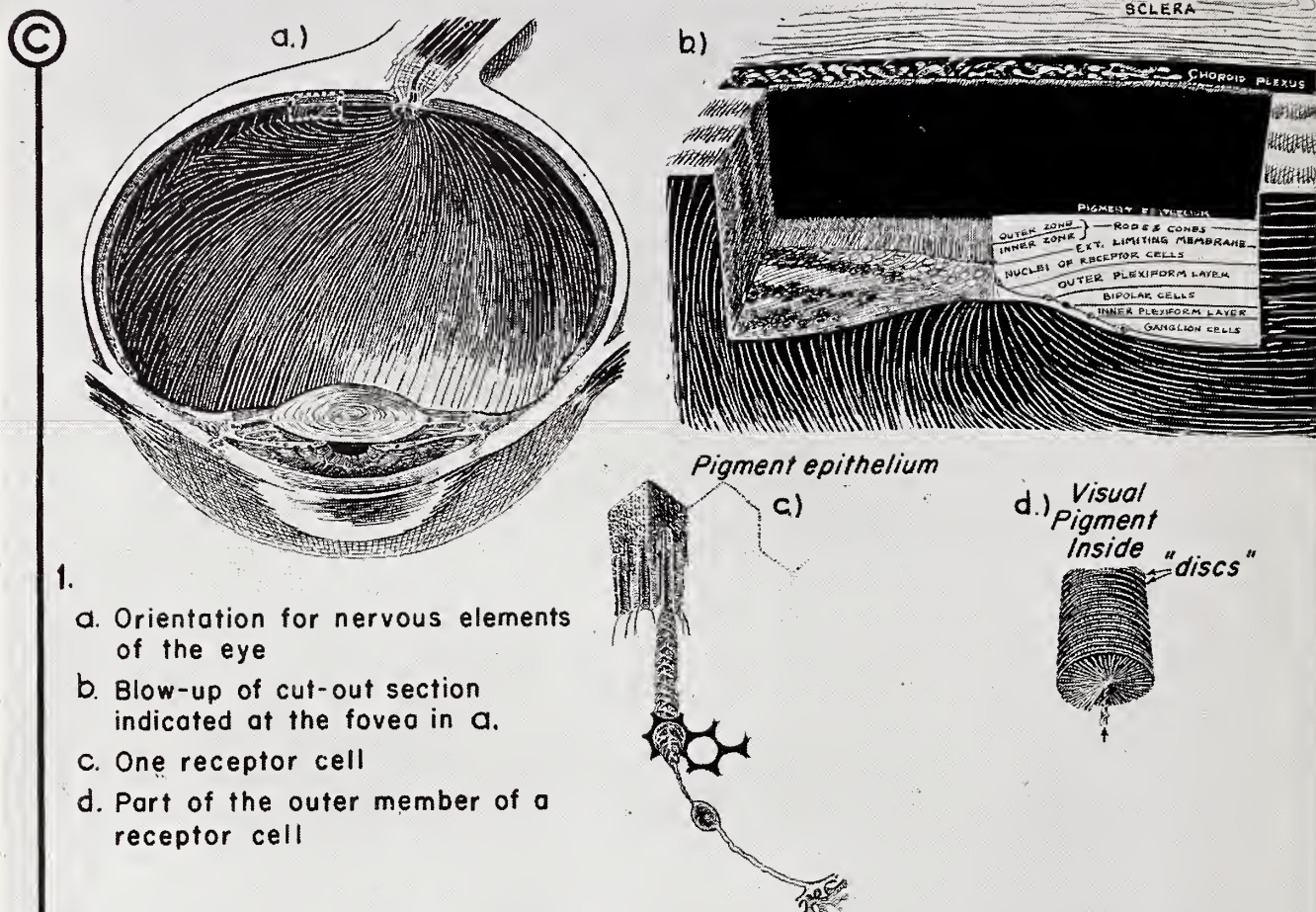


Figure I STRUCTURAL RELATIONSHIPS SHOWN AS A SEPARATE IDEA. Their reaction to energy is not brought out.



2. Guinea pig cochlea. Diagrammatic reconstruction to correlate structures as seen by sectioning and by stereoscopic microscopy with vital staining.

Courtesy of
J. Tonndorf

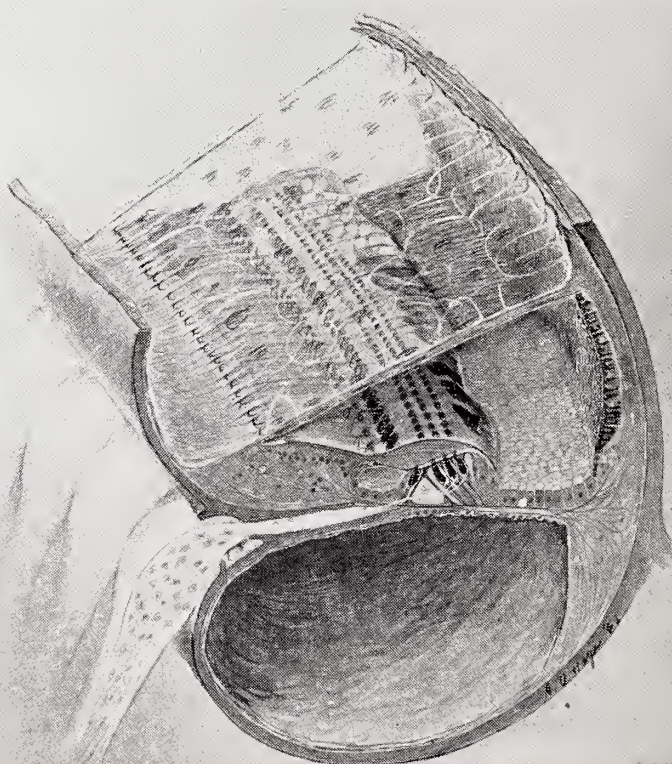
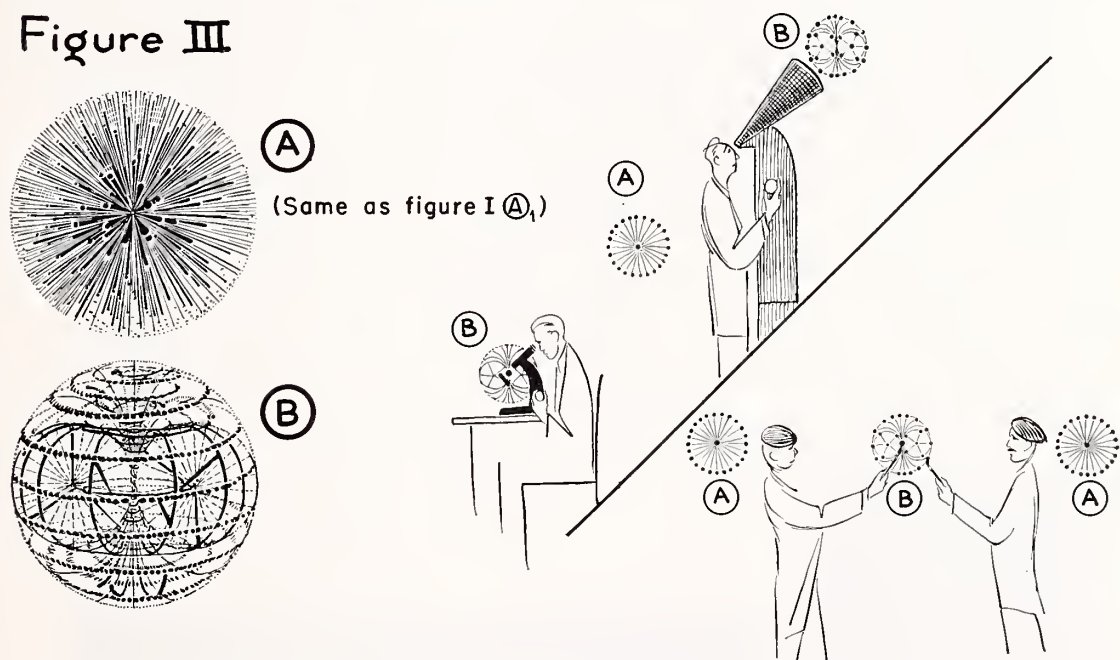


Figure II



The point, the sphere (drawn in two dimensions), and the line are theoretical principles making up a unit which pervades the physical universe. We can demonstrate universal form with their visual analogues (above) by drawing.

Figure III



(B) is a variation of the theoretical principles (A) (3-dimensional version of Fig. II C) that can often be visualized in nature and seems to be bound up with such variables as time, movement, and the relation of objects to one another. The scientists and artists in the illustration above are shown with ideal or infinite principles (A) in mind, finding and reproducing, respectively, time-bound information (B) about the world from the very small to the very large (including man). Parts of (A) and (B) or their variations, can be found in all the ramifications of scientific investigation. The relationships can be seen to stem from the elementary forms which are drawn to demonstrate ideas in mathematics, physics and chemistry.

Figure IV

Sometimes Figure III A and B (or parts or variations) are drawn because they demonstrate natural phenomena (A) Fig. IV, and sometimes while practicing drawing, they may just develop (B). Similarities between (A) and (B) can be seen below.

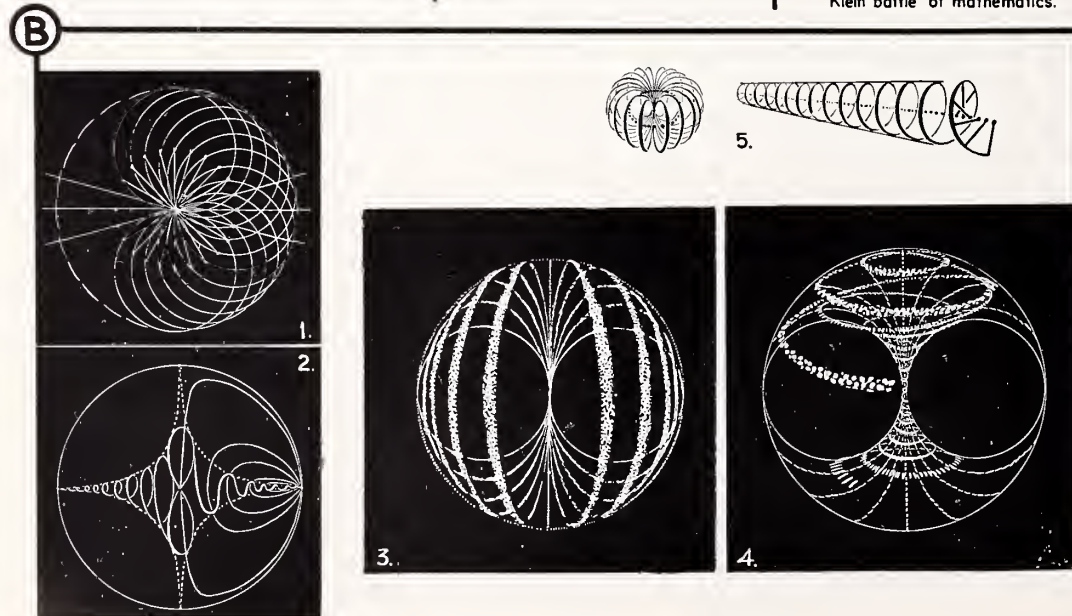
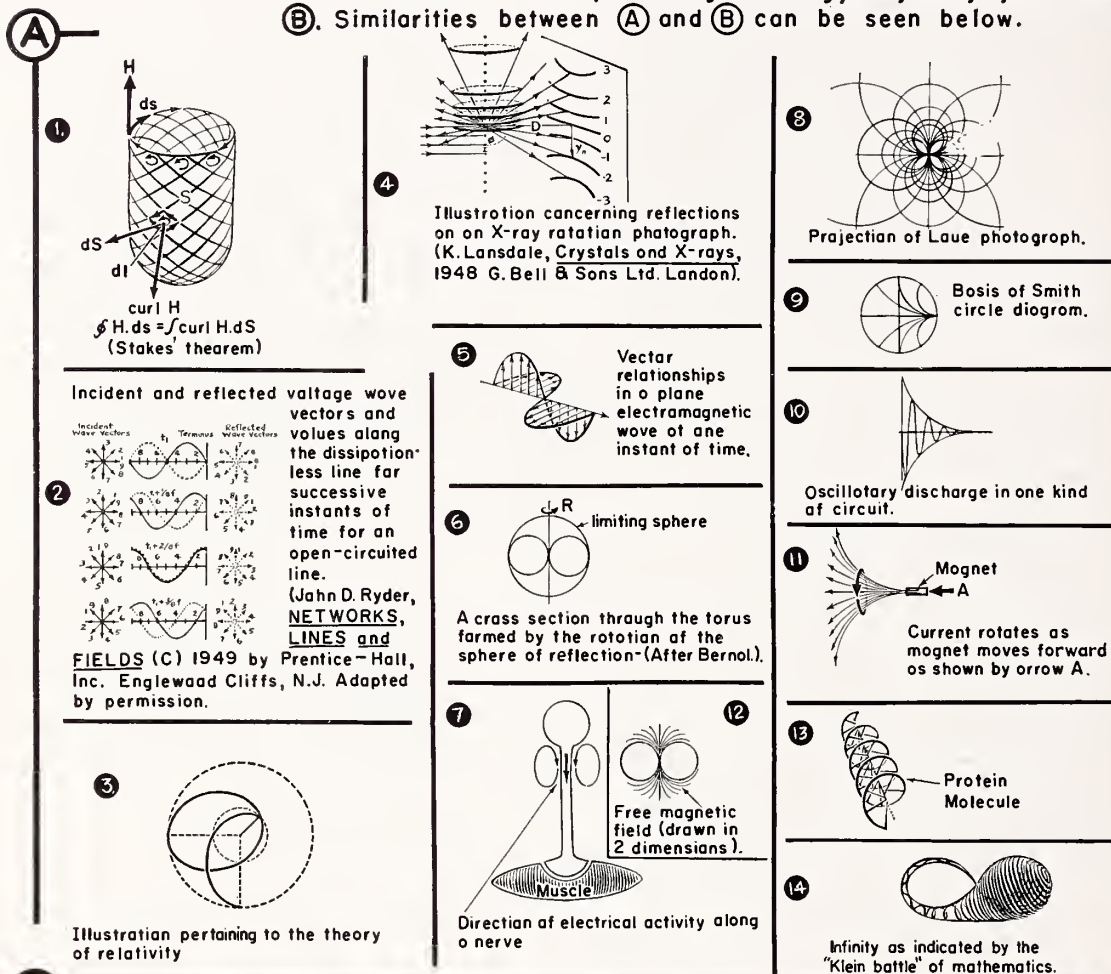
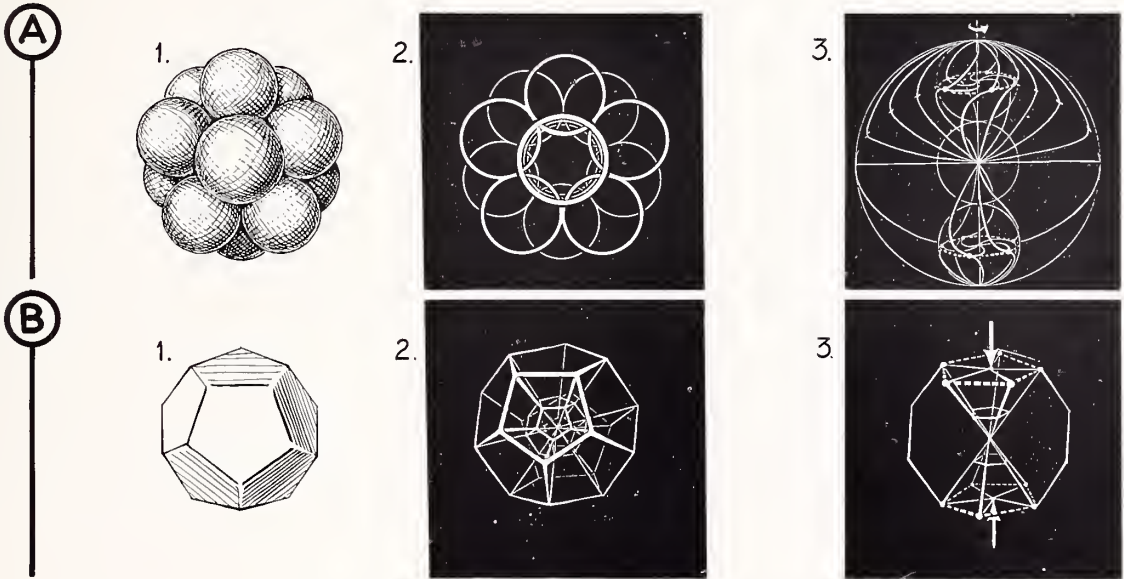
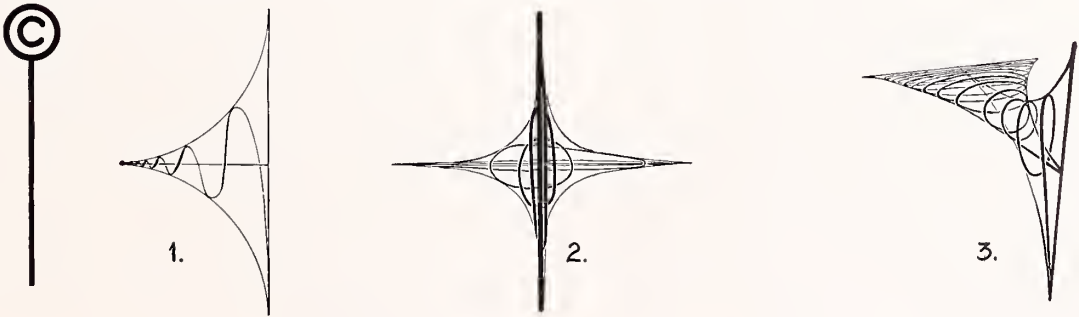


Figure V



- A1 symbolizes 13 equal-sized balls (of foil-covered clay). 12 of the balls surround and touch the 13th. By compressing A1, B1 was formed. And its duplicate was formed inside, but 13 times smaller (as in B2).
 - A1 also symbolizes "the bacterial virus containing single-stranded DNA as inferred by electron micrographs." (from Single-Stranded DNA by Robert L. Sinsheimer, Scientific American, July, 1962.)
 - A2 is the same subject drawn as transparent to show all the surfaces.
 - A3 is my attempt to demonstrate the ideas of attraction and motion of two opposing spheres in A1 or A2.
- What else does A symbolize and what else can be shown about it ?
- B1 and B2 (besides symbolizing squeezed clay balls(A1),also looks like: a pyrite crystal, a drawing of "water molecules linked together through hydrogen bonds in rings of five combined dodecahedrons." (from Inclusion Compounds by John F. Brown Jr. , Scientific American, July, 1962.)
 - B3 is my attempt at visualizing what A3 might look like crystallized or stopped.
- What else does B symbolize and what else can be shown about it ?
- C1,2 and 3 are taken from what is seen combined into one drawing in Figure IV B2. C1 (side view) is similar to Figure IV A10 C2, (front view) indicates the wave motion of C1 as if it were not only moving up and down but also sideways. This causes a distorted spiralling which is more understandable in C3 (3/4 view of the same figure)



not science; and equally, science is not science if it disregards the esthetic perfection in nature.

In my opinion, art and medical science are allied as they were in Leonardo's day. With the development of methods and ideas for determining form and energy on more refined scales, have come representational, interpretive and imaginative visualizations. But these pictures generally are associated with disciplines that are equally refined, so that the information is readily available only to a few. Therefore, although the visual part of the communication which goes on at a specialized level may be kept up to date, the correlation of particular knowledge through drawings too often comes late. There has been one notable exception. Chronologically, the development of the idea that there is no exact boundary between the human body and its environment coincided with the appearance of many art pieces showing the human figure more or less blended into its surroundings.

Artists look for forms that will catch the tenor of the time. Scientists, basic and medical, are in need of help from artists in communicating their discoveries. Therefore, a marriage between the two interests might be of advantage to both houses, so as to hasten the incorporation of particular and newly learned data into the body of common or universal knowledge.

To the artist: Do not hesitate to seek out specialized information. No form is foreign to those who know and have used the universal principles of the visual language. It is interesting to draw what scientists can visualize now, and to anticipate the forms that may be of interest to them later.

To the scientist: Do not hesitate to explain very specialized information to the artist, or to use your own sketches to amplify such explanations. The artist is probably already familiar with the forms that will portray your concepts. By illustrating these new forms, moreover, relationships to ideas in other branches of science may be brought to light.

State University of Iowa College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 17-YEAR-OLD WHITE FEMALE was admitted to the University Hospitals with a history of having undergone an appendectomy 19 days earlier. She had been seven months pregnant at the time, and three days after the operation she had spontaneously delivered a 3 lb. 11 oz. infant following a 13-hour labor. Two days after delivery she had developed abdominal distention requiring nasogastric suction, and four days following delivery she had developed a fever which rose to 104°F. Shortly after that, she had become dyspneic and cyanotic, and had developed tachycardia, peripheral edema and pulmonary congestion.

Ten days later, she had been transferred to another hospital. There, she was described as being "acutely ill, cyanotic and toxic, with temperatures of 103° to 104°F., with dependent lividity, with rales in both lungs and with marked distention with ascites." Correction of her fluids and electrolytes produced only slight improvement. She was digitalized and given Mercuhydrin. Abdominal paracentesis removed 3,700 cc. of cloudy,

dark-amber fluid. She was placed on oxygen, and given penicillin, streptomycin, tetracycline and Chloromycetin. She received seven blood transfusions and one unit of plasma. She was lucid at times, but at others her mind wandered. There was a questionable history of rheumatic fever at age 7.

She arrived at the University Hospitals six days after her transfer to the second hospital. On admission, she was very ill, and her respirations were labored. The blood pressure was 110/40/0 mm. Hg, the pulse rate was 140/min., and the temperature was 103.8°F. Posteriorly, the chest was dull to percussion to the line of the eighth rib on the right. Crackling rales were present in the left base. A grade III systolic murmur was heard over the aortic-valve area. The abdomen was soft but diffusely tender, and dullness was present in the flanks. No bowel sounds were audible. The cervix was moderately dilated, and there was a slightly grayish mucus in the cervical os. The uterus was moderately well involuted. On rectovaginal examination the parametria were soft and slightly thickened.

Initial laboratory values included a hemoglobin level of 10 Gm/100 ml. and a white blood cell count of 12,300/cu. mm. The urinalysis revealed many red blood cells on microscopic examination, and the electrocardiogram showed RS-T and T wave changes compatible with myocardial disease and digitalis effect. Roentgenograms of the abdomen and chest were interpreted as probably normal. Fluoroscopy revealed movement of both diaphragmatic leaves. Blood chemistries including blood urea nitrogen, creatinine and electrolytes were within normal limits. An abdominal paracentesis yielded 100 cc. of purulent serosanguineous fluid. A gram stain of this fluid was unproductive, and an amylase determination revealed a level of 66 Somogyi units.

The patient was taken to the operating room, where four-quadrant abdominal incisions were made and drains placed. Approximately 1,000 cc. of purulent material was removed in this manner. The patient was started on intravenous Chloromycetin. Subsequent cultures revealed alpha hemolytic streptococci sensitive to penicillin, tetracycline and Chloromycetin.

The patient was placed on digitalis and nasogastric suction, and received two units of blood. There was initial improvement, but by the second postoperative day the patient's fever again rose to more than 103°F. A repeat white blood cell count was 17,000/cu. mm., and the differential smear showed 40 band cells, 49 segmented neutrophils and 11 lymphocytes. The hemoglobin value was 8.8 Gm/100 ml. A repeat electrocardiogram showed a nodal tachycardia with a first degree AV block. She was given transfusions on two successive days. By the second evening, peristaltic sounds were audible, and some water was allowed by mouth.

On the third postoperative day, her temperature elevation continued. Her hemoglobin level was 12 Gm/100 ml., and the WBC was 41,700/cu. mm. Diffuse abdominal distention and tenderness were present. Rectal and pelvic examinations were not remarkable. The left lower extremity became swollen. The left chest was dull posteriorly to the level of the fifth rib, and a friction rub was audible. Heparin therapy was instituted, and the patient was also started on penicillin.

On the fourth postoperative day, subphrenic taps were negative for purulent material. A thoracentesis returned 18 cc. of straw-colored fluid. A chest roentgenogram revealed numerous radiopaque densities throughout both lung fields. The penicillin was stopped and albamycin started. By the next day the patient became unresponsive, with dyspnea and Cheyne-Stokes type respirations. A repeat chest roentgenogram revealed aeration of only the upper lobes bilaterally. She continued to do poorly. Hydrocortisone intravenously was started, but within 30 minutes the patient became semi-responsive again.

On the sixth day the patient's systolic pressure fell to 50 mm. Hg, and she was totally unresponsive. The previously noted heart murmur was considerably accentuated. Intravenous aramine brought the blood pressure up to 120/80 mm. Hg, but she remained unresponsive until her death a few hours later, on the seventh hospital day.

SUMMARY OF CLINICAL DISCUSSION

Mr. David Tweito, junior ward clerk: Labor was probably precipitated by the acute appendicitis in the patient under discussion. Two days after delivery she developed abdominal distention, which we assume was due to paralytic ileus possibly initiated by beginning or early peritonitis. This peritonitis could have occurred from any of several causes. The least likely in this day and age would be an endometritis that spread via veins and lymphatics to involve the peritoneal cavity. More likely would be the spread of an appendiceal abscess. Another possibility would be the "blowing out" of the appendiceal stump, with contamination of the peritoneum.

After the development of peritonitis and ileus, she developed high fever, dyspnea, cyanosis, tachycardia, peripheral edema and pulmonary congestion. These symptoms could have been the result of a pulmonary embolus due to a septic or non-septic thrombus. The septic thrombus could have resulted from peritonitis with pelvic vein irritation and infection, or as a result of thrombophlebitis associated with endometritis. Non-septic thrombi could have formed during the postpartum period from concurrent stasis and plebothrombosis in the largely dilated parametrial veins. Another explanation for these symptoms would be left-sided heart failure from possible rheumatic fever. By the same token, as long as we are assuming a former incident of rheumatic fever, she may well have had the onset of an acute bacterial endocarditis secondary to septicemia. It is possible that a combination of these factors—embolism, congestive failure, and acute bacterial endocarditis—could have occurred. The fact that she was subsequently digitalized and given Mercuhydrin constitutes evidence of heart failure. It is noted that she received seven blood transfusions and a unit of plasma, which constitute acceptable treatment for massive peritonitis.

On her admission to University Hospitals, the grade III systolic murmur which was heard over the aortic area was compatible with acute bacterial endocarditis, as were the EKG changes which showed myocardial disease and digitalis effect. The essentially negative pelvic examination does not rule out endometritis. The hematuria noted at that time is not incompatible with the stated differential diagnosis. Hematuria may be seen in endocarditis and also, in this case, may have been subsequent to a renal embolus secondary to the formation of thrombophlebitis. By them-

selves, these emboli are not sufficient to impair renal function. Clinical examination of the chest and the x-ray findings were not complementary at this time. Moreover, on roentgenologic examination the lungs later showed numerous radiopaque densities and poor aeration. These findings could be interpreted as multiple areas of septic infarctions, abscesses, and pneumonia.

Following four-quadrant abdominal incisions, the patient showed a rise in white count with a shift to the left, probably indicating improved systemic response to septicemia. Examination of the peritoneal fluid for amylase content at that time showed a normal value, but we cannot rule out pancreatitis completely. Her left lower extremity became swollen, undoubtedly because of the femoral thrombophlebitis often seen in cases of puerperal infection, and possibly representing an extension of the pelvic thrombophlebitis.

After this, the patient had a progressive downhill course, became unresponsive, exhibited dyspnea and Cheyne-Stokes respirations, and died. In addition, the Cheyne-Stokes respirations may have represented a loose septic embolus to the brain or rupture of the aortic valve secondary to bacterial endocarditis. At that time, she may also have had some meningitis, although the evidence for it is not great.

We believe the patient's death was the result of overwhelming septicemia, heart failure, acute bacterial endocarditis and multiple septic infarcts with abscesses, pneumonia, and peritonitis. The initiating cause may have been puerperal infection or endometritis, ruptured appendiceal stump, spread of an appendiceal abscess, or any combination of these.

Dr. S. E. Ziffren, Surgery: Are there any questions you wish to direct to Mr. Tweito? If not, Dr. Tidrick is going to carry on the discussion.

Dr. R. T. Tidrick, Surgery: I should like to start by commenting on the hazards of appendicitis during pregnancy. Some years ago Dr. Bean gave me a very nicely preserved copy of the classic work by Kelly on appendicitis. It is a 1905 edition and has a marvelous collection of Max Brödel's illustrations. The point in my bringing it up is that almost nothing really significant has been written since 1905 on the relationship between appendicitis and pregnancy. It is elucidated about as clearly and illustrated more precisely in Kelly's book than in most of the current works in which this combination is mentioned.

There have been a number of statistical studies published in the American literature. Appendicitis during pregnancy is treacherous. I can't quote exact figures, but the threat that it poses to the mother rises precipitously in the third trimester of pregnancy. The risk to the fetus is even greater. The closer a patient comes to term, the more mechanical factors concern us, in terms both of the walling-off reaction, in the event there is acute

suppurative appendicitis, and of the ability of the physician to make a correct diagnosis because of the altered position of the greatly enlarged uterus and the distortion this produces in terms of normal or usual locations of tenderness. Possibly this distortion affects the interpretation of muscular rigidity and all of the other physical signs. If the appendix ruptures during the critical latter part of the third trimester, the chance of walling-off, with the aid of the greater omentum, is greatly altered. In addition, of course, there is the additional hazard of possible endometritis. As for the previous speaker's suggestion that endometritis, acute and lethal, has gone the way of the passenger pigeon and the buffalo, I must disagree. I believe that our colleagues from obstetrics who are here today may disabuse him of that view.

This clinical record omits a very important point. It doesn't tell us what was found at operation or what the appendix showed. In a sense, this is like beginning a magazine story in a public waiting room and reading on and on, becoming interested, and then finding that someone has torn out the last two pages. This matter of the appendiceal findings is the pith of our story, and they have been omitted. If this patient were still confronting us and alive, we would be on the telephone, calling the physician at home, and wanting to find out what he saw and also what the pathologist described.

The story suggests that this patient had peritonitis during the first of her three successive hospitalizations. One wishes that the description of the fluid removed at the paracentesis had included the all-important notation about odor. If one is in a hurry, he may have more confidence in odor than in bacteriologic reports.

I might comment about the simultaneous mixture of the antibiotic agents administered here and the curious bacteriologic picture. These do give us some support as regards the treatment the patient was receiving. The description we are given of her, upon her admission to the University Hospitals, suggests that as Mr. Tweito pointed out, she might indeed have developed subacute bacterial endocarditis, but it still sounds as if she had peritonitis. The description of the cervix, as given in this protocol, is equivocal, and one can suppose that it was put that way on purpose. It suggests that she could or could not have had an endometritis. It simply does not tell. At abdominal paracentesis, it states that purulent fluid was obtained. The gram stain of this might not have shown anything, considering the amount of antibiotic therapy she had received, but one would gladly give it a try. The amylase determination likewise doesn't tell us very much. This is useful principally when we are trying to detect it in the serum and in the urine and aspirates at the same time. These fluids do not stay in equilibrium very long under these conditions. There may be over-

dependence, perhaps, on the matter of amylase determination and aspirates from the peritoneal cavity. They don't have any particular specificity in relation to pancreatitis. The alpha hemolytic streptococcus cultured after the four-quadrant drainage procedure reminds one of the work of Brown and associates in St. Louis on acute endometritis. It may be that one of our obstetrical colleagues present here would like to comment on this matter later in this meeting.

This patient, as our first speaker has pointed out, had a brief flurry of improvement. Then she seems to have developed deep phlebitis in the lower extremity and then pneumonia, possibly with a shower of emboli. The most logical organism to be implicated in this kind of process would be a hemolytic staphylococcus. It is hard to dispel the fable that corticosteroids are effective in septic shock, perhaps because of our high regard for the clinicians who initially advocated them. Today much of their work is being refuted by many bits of evidence, and I doubt that we have saved as many as we have harmed with steroids in septicemia.

There is another or last omission in this protocol which troubles us, and that is the part of the punch line which mentions jaundice. We have come up to this fork in the diagnostic road, and possibly Dr. Van Epps can help us here by interpreting the radiographs. For the question here is, did she have peritonitis and did she die of peritonitis and all of its lethal septic complications, or if she indeed had appendicitis, did she have pylephlebitis? If she had pylephlebitis, why is there no mention of whether there was mild icterus and hepatic tenderness? This is the way we would ordinarily expect her to have died, if she had appendicitis. If she blew out the appendiceal stump, she should have had fecal fistulation. I cannot say that I have seen a great number of such cases, but I have searched my memory and cannot recall ever having seen a blown appendiceal stump, under these circumstances, go on to spontaneous closure. I cannot believe that it occurs very often. Therefore, one must be very skeptical that her death was due directly to the disruption of the appendiceal stump and peritonitis on that basis.

Back to Dr. Van Epps. I believe that it would help us a great deal to know whether he could see gas under the diaphragm, what his interpretation of the pattern of the ileus was, and whether there was evidence of free exudate in the peritoneal cavity. I believe these roentgenograms were reported as normal or negative.

Dr. E. F. Van Epps, Radiology: X-ray examinations don't always contribute in a positive sense, but just as importantly they may give information of a negative kind. Films of the abdomen and chest were obtained in this acutely ill person. They showed no evidence of intestinal obstruction,

free intraperitoneal air, loculated air in an abscess, or air in the biliary tree. The chest represented what is seen in hypoventilation of the lungs; there was no evidence of pneumonia or pleural effusion.

I should point out that the properitoneal fat line as seen on the films of the abdomen is visualized in a portion of its extent. When this is present, we feel that a peritonitis is unlikely, but it is not an infallible sign, for localized intraperitoneal collections of pus will not obliterate the line. Generalized peritonitis may be present and thus make the line invisible on radiography.

Subsequent chest films, the last of which was taken 24 hours prior to the patient's death, do not reveal any pleural effusion, but there is an infiltrate on the left which could and probably does represent a pneumonitis or a septic infarct, in light of her disease process. The densities described in the protocol are blood vessels which are spuriously increased because of the hypoventilation. The overall radiographic examination would lead us to the conclusions that there was an inflammatory process in the abdomen without localization to a specific area, that it was producing obstruction, and that there was either a terminal pneumonitis or septic emboli to the lungs.

Dr. Ziffren: For your information, one individual, a gynecologist, wrote on the chart: "This was a non-inflamed appendix." The pus had no odor and there was no jaundice.

Does anyone here want to add anything or to ask any questions? Dr. Warner, would you present the pathology?

Dr. E. D. Warner, Pathology: The findings in this case were pretty much what have been indicated and what you would expect. There was a generalized peritonitis, with bilateral subphrenic abscesses. There were multiple collections of loculated pus in the general peritoneal cavity and in the pelvis. This pus was yellowish and did not have a fetid odor, and there was no gas. Thus, at autopsy there was no gross evidence that a colon bacillus had had a part in the peritonitis. The appendiceal stump was not leaking grossly, and there was no fistulous tract or other evidence of a recent leak. The cecum and the appendiceal stump were matted in adhesions and in an exudate which was undergoing organization. As Dr. Tidrick pointed out, had there been a gross blow-out of the appendiceal stump, it would have been primarily due to ischemic slough. The opening would have been large, and it probably would not have closed. However, a small pericecal abscess, not really due to a gross perforation, could have been present.

There was no pylephlebitis, there were no thrombi in the portal bed at all, and there were no liver abscesses. There were multiple small abscesses and areas of suppuration that were indefinitely outlined in the lung. There were no gross thrombi in the pulmonary vessels. Although

the distribution of these pulmonary abscesses was essentially that of embolic spread, with the small abscesses mostly in the periphery of the lung, the embolic masses which probably were associated with them were not grossly evident. In other words, they were very tiny.

There was no bacterial endocarditis. The heart valves were entirely normal in appearance, and I might say they showed no suggestion of the old rheumatic fever which had been suggested in the history. There was a fibrinous pericarditis without appreciable fluid. This was associated with a myocardial abscess in the left ventricle.

There were very tiny abscesses of a pyemic type in the kidneys bilaterally. There was some blood in the renal pelvis on the right side, and there was blood, of course, in some of the embolic abscesses in the kidneys. This finding would account for bleeding into the urinary tract.

The other site of infection was the endometrium. The endometrium had been replaced by a necrotic sloughing surface. Incidentally it was neither gangrenous nor fetid in odor. Both cocci and bacilli could be seen. Unfortunately the uterus itself was not cultured.

Now as to the organisms that were obtained: hemolytic *Staphylococcus aureus* was cultured from the heart blood, the splenic pulp, the lung and the peritoneal cavity, and *Pseudomonas aeruginosa* was cultured from the lung and the peritoneum.

I might say that we could demonstrate thrombi neither in the pelvic veins outside of the uterus nor in the femoral veins. Fluid blood could be freely milked out of the veins of both legs without producing any clots. There were no gross thrombi anywhere except in the larger veins in the uterine wall itself.

The first slide is a photograph of a section of the uterine wall showing the large thrombi in uterine veins. The sloughing endometrium shows no cellular detail even under microscopic examination, but does show both cocci and bacillary forms of bacteria. In the next slide, one sees a low-power picture of myocardium and lung tissue. The lower wedge is lung tissue. There is a row of four abscesses beneath the pleura. At the upper left is the left ventricle. In this particular block, there is a large abscess.

This is a section of lung at a higher magnification. It shows a clump of organisms in the center. Most of these under the microscope are cocci. A pulmonary vessel wall has been largely destroyed in this area.

The next slide is a high-power view of heart. The large red structures are necrotic myocardial fibers greatly magnified. The dirty-looking blue granular material can be identified under the microscope as quite well preserved cocci.

In a section of kidney, one can see the remnants of a renal glomerulus with a large clump of bacteria in the center. The capsule has broken down,

and the entire area is undergoing early suppuration. This was one of many similar lesions in the kidneys. The liver weighed approximately 1,800 Gm. The section shows the fatty metamorphosis that we often see with sepsis and the vacuolization of liver cells.

The adrenal cortex shows normal histology, with an absence of lipid in the central zone of the cortex.

The next slide is a diagrammatic sketch to show what we might expect from an appendicitis with appendiceal abscess going on to death with infection, as Dr. Tidrick mentioned. It demonstrates pylephlebitis with drainage via the portal system into the liver and multiple liver abscesses. This is not a necessary route of spread for infection from appendicitis, but it is the classic type and a very common one. It was totally absent in this case.

We have, then, a patient dead of sepsis. There was peritonitis, endometritis, and staphylococcal pyemia with multiple abscesses in the lungs, kidneys, and heart. There probably were others. Skeletal muscle, for example, is one site where we quite commonly see localization of *Staphylococcus aureus* in staphylococcal pyemia.

We are left with the problem of reconstructing the sequence of events. As far as the time sequence is concerned, the infection could have started as a small pericecal abscess, from contamination at the time of operation or spread from the appendix without actual perforation before the operation. A colon bacillus should have been involved, but we did not culture it at the time of death, and it evidently was not present earlier, at the time the peritoneum was drained. These circumstances make it unlikely that it was appendiceal in origin, except that I do not know quite how much weight to put on the possibility of the complete obliteration of a colon bacillus infection by means of the antibiotic therapy. Had there been a continued leakage, of course, it would not have been obliterated, but there was no evidence of continued leakage.

The distribution is classic for endometritis and not classic for appendicitis, but I don't think that we can do more than guess. For the reasons mentioned I should be a little inclined to suspect the endometrium rather than the appendix as the source for the fatal spread of infection. I think perhaps the timing is a little bit better for the former because there was no definite infection until two to three days after the delivery. Fever, according to the records that I had, was not noted until the third or fourth day after delivery. If that is true, the endometrial infection could have resulted from contamination via the birth canal or from peritonitis secondary to the appendectomy episode. Personally, I do not feel that the question can be answered.

I did find a few statistics of 1960 vintage in the British literature on appendicitis in pregnancy, and

they may be of interest. In a series of 373 cases of appendicitis complicating pregnancy, the cases were pretty well distributed throughout the three trimesters, and there hadn't been any striking predilection for any part of the nine-month period. There was a striking difference in maternal mortality, however, depending upon the trimester in which appendicitis occurred. There was fetal loss in 13 per cent of cases in the first trimester, 16 per cent in the second, and 20 per cent in the third.

Just a word as to some of the reasons why appendicitis is particularly serious in pregnancy. The diagram here shows rather nicely how the position of the appendix changes as pregnancy progresses. It shows that the appendix is up under the right rib cage by the eighth month. The position of the appendix complicates the problem in several ways. First, it makes the localization of an infection more difficult, and also adds to the problem of diagnosis. As the appendix moves up into the general peritoneal cavity, it becomes difficult for the omentum to wall off an infection. Thus, it is more likely to become generally spread if there is leakage from the appendix. Also, the uterus is in the way of localization by the omentum. The contractions of the uterus will further interfere with localization of infection.

Dr. Ziffren: Are there any questions for Dr. Warner? Dr. Dunn is here from the Department of Obstetrics and Gynecology. I wonder whether he may have some comments to make.

Dr. L. J. Dunn, Obstetrics and Gynecology: Having been reassured by Dr. Warner that the problem cannot be solved, I feel free to make some comments. I should like to redirect your attention to the protocol and indicate why I feel that endometritis is not the most important entity in question.

In the first three sentences, we learn that the patient had undergone laparotomy, presumably for appendicitis, and that within a short time thereafter she went into labor, delivered, and then developed ileus. A review of the literature back to 1895, most of the articles being in the American periodicals, shows a rather consistent finding—that those patients who abort or go into premature labor are those with advanced forms of appendicitis. Those patients who have been operated upon with the disease process localized in the appendix have an incidence of subsequent labor of only 4 per cent. However, if an appendiceal abscess or peritonitis is found at the time of surgery, the incidence of labor soon after surgery increases to 40-80 per cent. Of course, such statistics cannot be applied to a single patient, but I think these figures do help to persuade us that the woman whom we are discussing today was more severely ill than one might have expected if the infection had been limited to the appendix.

Two days postpartum, the patient was noted to have an ileus which might well have been present but unrecognized prior to that time. The lack of

clinical findings in this patient up to this point is not at all inconsistent with generalized peritonitis. Experience has shown that during pregnancy the patient's complaints or findings are virtually the same, whether the disease is limited to the appendix, or whether an appendiceal abscess or generalized peritonitis is present.

It is surprising that the majority of patients who have been reported with peritonitis due to appendicitis in pregnancy have had a temperature elevation of less than 100.2°F., a normal or only moderately elevated white cell count, and an absence of abdominal rigidity. It is this atypical behavior that results in the delay in treatment and thus is responsible for the high mortality rate. The further spread of infection by uterine contractions and the descent of the uterus following delivery has been a point of concern for many years because of the high mortality in this group. A number of years ago, it was thought best to empty the uterus at the time of surgery to eliminate this complication, but this form of management has been given up because of poor results. The possibility does exist in this case that a pericecal infection was spread throughout the peritoneal cavity by labor and delivery.

The autopsy report indicates the presence of a severe endometritis. If this was the major problem, I think it is surprising that it did not progress in the usual fashion. Although endometritis can spread rapidly to cause peritonitis, the process usually takes four or five days and is usually caused by streptococci. These organisms are generally so sensitive to antibiotics that such infections are rarely seen today. As indicated in the student's presentation, if the peritonitis were the result of an endometritis caused by more resistant organisms such as staphylococci or coliform bacilli, we should expect to see spread through the lymphatics with an associated metritis, parametritis, possibly salpingitis, and pelvic peritonitis with associated multiple abscess formation. The other route of involvement, to explain the septic emboli, would require the finding of thrombophlebitis in the placental site and extending into the pelvic veins. Apparently in this case, the disease was limited to the uterus on pathologic examination, even though it was performed 19 days after the onset of the patient's illness. Although the threat of infection is still a real one and of constant concern to the obstetrician, it is significant to point out that a maternal death from puerperal infection has not occurred in the State of Iowa in many years.

These points in the patient's history and autopsy findings suggest to me that the major illness preceded the onset of her labor.

Dr. Warner: Didn't I understand you to say there was a report of a normal appendix?

Dr. Ziffren: One man has written in the chart that it was not an acute appendicitis.

Dr. Warner: If I created the impression that I thought the infection of the uterus was limited to the endometrium, I certainly would like to disabuse you of that notion. This uterus was embedded in a mass of pus and fibrin. There was cellulitis throughout the uterus. The endometrium itself was gone and had been replaced by necrotic slough. There were large thrombi in the uterine veins, and the lesions in the lungs, I would say, were very much those of septic emboli.

Dr. William K. Hamilton, Anesthesiology: I would not be so naive as to think that what was done to this girl may have contributed to her death, but what was not done may have contributed. I made a list of things that were done to her which were not all conservative. She received hydrocortisone therapy, a couple of operations, electrocardiograms, multiple antibiotics, blood cultures, electrolyte determinations, a repeat blood count, a couple of transfusions and digitalis. As findings, she had rales in her lungs, labored respirations, cyanosis, and roentgen evidence of severe hypoventilation. I can find no evidence that her respiratory function was evaluated, or that she received any respiratory therapy. I think this might have been appropriate in this patient.

Dr. Ziffren: I believe that is a very good comment, Dr. Hamilton.

There is a bacteriologist present, and I should like to ask him some questions. What is the significance of the cultures that were taken, since the patient received so many antibiotics? Furthermore, what effect had the antibiotics had on the bacterial flora that were cultured?

Dr. Snyder, Microbiology: The effect of antibiotics on the bacterial flora of the patient is, of course, unknown. There are numerous references in the literature indicating that the "broader" the antimicrobial therapy or the more numerous the antibiotics, the greater the problem of superinfection becomes. This patient received a goodly number of antibiotics, including penicillin, streptomycin, tetracycline and chloramphenicol. Weinstein, in 1954, reported that among 3,000 patients receiving antibiotic therapy, there was a superinfection rate of about 2 per cent, and that of the infected patients 15 per cent had been treated with chloramphenicol. *Pseudomonas aeruginosa* was cultured from this patient both before and after death. The *pseudomonas* organisms comprise part of the normal flora of the intestine and could have been in the peritoneal cavity as the agent for the peritonitis and appendicitis.

The effect of the antibiotic therapy on the laboratory cultures is also unknown. Perhaps other organisms were present and were inhibited or killed by the antibiotics. We could have done more in the laboratory if we had been impressed with the severity of this problem. Enzymes to inactivate the tetracycline, streptomycin or chloramphenicol are not available. However, the specimen could

have been inoculated into a larger volume of medium in an attempt to dilute the antibiotics, or the specimen itself could have been centrifuged in an attempt to remove the antibiotics from the organisms and to concentrate the organisms in the specimen.

Dr. Warner: How likely do you think it is that the antibiotic therapy might have eliminated a colon bacillus localized in the pus of walled-off intraperitoneal abscesses?

Dr. Snyder: The *Pseudomonas aeruginosa* isolated from this patient was quite resistant to antibiotics. The laboratory sensitivity tests indicated that it was resistant to chloramphenicol, tetracycline and streptomycin. One of the earlier cultures, an endocervical swab taken before death, contained both *Escherichia coli* and *Pseudomonas aeruginosa*. A culture of peritoneal fluid obtained before death also contained the *pseudomonas* organisms. The *Escherichia coli* was sensitive to 30 mcg. of chloramphenicol. Thus, the colon bacillus could have been present and then have been eradicated by the antibiotic therapy, leaving only the antibiotic-resistant *Pseudomonas aeruginosa*.

Dr. Ziffren: Are there any other questions?

Dr. Paul J. Laube, Dubuque: I should like to know whether general body hypothermia was considered in this patient at all, or whether temperature reduction has been employed in other cases of sepsis as an adjunct to measures such as were employed here.

Dr. Ziffren: I know it was not considered in this patient at all, and according to Dr. Tidrick and Dr. Dunn it has not been considered in any other cases.

ANATOMICAL DIAGNOSES

1. Peritonitis, generalized, severe
 - a. Abscess, subdiaphragmatic, bilateral
 - b. Abscesses, peritoneal, loculated, multiple
2. Acute endometritis, necrotizing
3. Septicemia, hemolytic *Staphylococcus aureus*
 - a. Cultured from peritoneal exudate, lung, spleen, and heart blood
 - b. Pyemic abscesses, lungs, heart, kidney
4. Ulcer, gastric, acute

STUDENT DIAGNOSES

Septicemia
 Cardiac failure
 Acute bacterial endocarditis
 Multiple septic infarcts
 Pneumonia
 Peritonitis due to
 Endometritis or
 Ruptured appendiceal stump closure or
 Spread of an appendiceal abscess

CLINICAL DIAGNOSES

Generalized peritonitis
 Septicemia
 Multiple septic emboli due to
 Appendicitis



SURGICAL TREATMENT OF ABDOMINAL ANEURYSM

A recent report by a Minneapolis surgical group* on the treatment of abdominal aneurysm suggests that surgical intervention is clearly justified in this condition. Several clinical studies have pointed out the serious potential of untreated abdominal aneurysm and have indicated that one of three will rupture within one to one-and-a-half years from the time it is recognized, and the majority will rupture within five years. The facts that an aneurysm is small and the patient has no symptoms from it offer no assurance that it will not rupture.

The Minneapolis surgeons report their results in 52 cases of unruptured abdominal aneurysm operated upon between 1957 and June, 1962. The patients varied in age from 53 to 80 years. Eight of the patients were in their fifties, 29 were in their sixties, 14 were in their seventies, and one patient was 80 years old.

In the majority of patients there was other evidence of cardiovascular disease, but from their experience the authors found this did not contraindicate surgical correction of the aneurysm. Fifteen of the 52 had experienced episodes of coronary thrombosis and infarction. Two patients were in congestive failure when first seen, and surgery was delayed until medical management had corrected the condition. Each had an uneventful convalescence from the operation. Several patients had had cerebrovascular accidents before being operated upon for abdominal aneurysm. In almost all of the patients on whom surgery was performed, the electrocardiograms were abnormal.

No patient was denied the benefit of surgery except for contraindications such as severe angina at rest, heart failure which was not amenable to medical management, and extreme age and senility. In the group of 52 patients, there were five surgical deaths (9.6 per cent). Three of the deaths occurred in the first six patients. In the last 46 consecutive patients operated upon there were two deaths, a mortality of 4.3 per cent. There was no significant difference in the mortality rates

of the various age groups. The patients in their seventies had about the same survival rates as those in the fifties and sixties. Of the five surgical deaths, two were the result of technical errors; a third patient died from cardiac failure in the immediate postoperative period; the fourth patient developed cardiac arrest and died during the operation; and the fifth patient died from postoperative renal failure.

Forty-seven patients survived the operation, and after follow-up periods of 1 to 5 years, 36 patients were alive and free of complications referable to the graft. Of the 11 patients who died, three succumbed as a result of complications directly related to the graft, and the remaining eight died of causes related to generalized arterial disease.

A mortality rate of 4.3 per cent in 46 consecutive operations for the correction of an unruptured abdominal aneurysm is convincing evidence of the advances which have been made in vascular surgery. These successes have imposed upon the clinician the obligation to detect aneurysm of the aorta promptly, in order that the patient may have the benefit of early operative treatment.

SCALENE NODE BIOPSY

Scalene node biopsy has become a frequent diagnostic procedure in diseases of the chest. A recent report from North Carolina Sanatoria* demonstrated the efficacy of this procedure in 315 patients upon whom it was performed during the period from June 1, 1954, to May 31, 1962. In this group, scalene node biopsy was positive in 178 patients (56.5 per cent), and in 137 patients it was negative.

In the North Carolina study, patients with sarcoidosis comprised the largest group, 198 in number. Twenty of this group were white and 178 were colored. Most of the patients with sarcoidosis were between 10 and 30 years of age. Scalene node biopsy was positive in 141 (71.2 per cent) and negative in 57 (28.8 per cent).

Forty-one of the 315 patients had biopsy because of suspected neoplasms. The scalene nodes were positive in 21 of the patients and negative in 20. Primary cancer of the lung was found in 12 of the patients, and metastatic lesions in nine of the group.

Sixteen patients with carcinoma had negative scalene node biopsies. Other biopsies demonstrated a neoplasm in nine cases. Six of these were of primary origin, and three were metastatic. Seven cases were diagnosed on clinical and roentgenologic evidence.

The correlation between biopsy results and other diagnostic procedures in the 41 cases of

* Schmidt, W. R., Jensen, N. K., Garamella, J. J. and Lynch, M. F.: Abdominal aneurysm. *MINN. MED.*, 66:455-458, (May) 1963.

* Sochocky, S.: Scalene node biopsy in diseases of chest; review of 315 consecutive biopsies. *N. CAROLINA MED. JOURN.*, 24:157-158, (April) 1963.

malignancy was of interest. Bronchoscopy was done on 22 of the 41 patients in this group. The results of bronchoscopy were positive in nine cases—in four patients scalene biopsy was positive, and in five it was negative. Bronchial washings were positive in 10 patients—in five with positive node biopsies and in five with negative. Sputum cytology was done in 25 of the 41 patients, and was found to be positive in 12 patients with positive node biopsies and in 13 with negative.

A third group was composed of 76 patients who had other types of respiratory disease. Scalene node biopsy was positive in 16 cases, and evidence of tuberculosis was found in all of them. Nodes were negative in 60 patients in this miscellaneous group.

A somewhat similar study, by deNiord,* in a smaller group of patients, attempted to correlate the findings from bronchoscopy, scalene node biopsy and sputum cytology in the diagnosis of pulmonary malignancy. Fifty-six patients were subjected to these tests and subsequently underwent thoracotomy for tissue diagnosis. In an additional 14 patients, bronchoscopy and scalene node biopsy were done to establish the diagnosis of sarcoidosis or to rule out a fungus infection.

The 56 patients in this study were all suspected of having bronchogenic carcinoma. The average age was 58 years. Forty-eight of the group were male, and eight were female. Of 28 patients who had non-palpable scalene nodes, eight were positive. Of 18 patients with palpable scalene nodes, 17 proved to have malignancies. Bronchoscopic biopsy was positive in 17 of 38 patients with bronchogenic, epidermoid or anaplastic tumors. Of 12 patients with alveolar or bronchiolar carcinoma, bronchoscopic biopsy was positive in three. Sputum cytology was positive in eight of 38 patients with proximal bronchogenic or anaplastic lesions, and in seven of 12 patients with alveolar cell tumors.

The right pre-scalene fat pad receives the lymphatic drainage from the right lung and from the left lower lobe. The left upper lobe drains to the left pre-scalene nodes. The finding of positive pre-scalene nodes indicates extension of an infection or of a neoplasm by way of the paratracheal lymphatic chain.

Biopsy of the scalene fat pad is a simple procedure which is done under local anesthesia. However, it is not an operation to be done by a neophyte, for important anatomical structures are involved. As the above reports indicate, it often establishes an accurate diagnosis of pulmonary disease, and it may spare the patient the necessity of exploratory thoracotomy.

* deNiord, R. N.: Diagnostic triad: importance in diagnosis of pulmonary malignancy. *VIRGINIA MED. MONTHLY* 90: 235-237, (May) 1963.

CARE OF DIABETICS' FEET

Ulcerating lesions of the foot in the diabetic patient are indolent and notoriously difficult to heal. The successful management of patients with this problem has been reported from the diabetic clinic of the Mount Sinai Hospital in Cleveland.* During the period 1959 to 1961, 30 diabetic patients with ulcerating lesions of the foot were treated by conservative measures, and complete healing resulted. As a result of their experience, the authors were of the opinion that by the early treatment of small lesions and with conservative management, amputations could often be avoided.

Diabetic patients frequently have chronic occlusive vascular disease which compromises the circulation of the lower extremities. Neuropathy, with disturbance of sensory and trophic functions, is also common in the diabetic. As a consequence, ulcerative lesions of the foot are frequent and are difficult to heal. The lesions are usually seen on the plantar surface over the heads of the metatarsals and on the heel, on the tips, the dorsum and the web areas of the toes, and beneath the nails. A callus is frequently present, and beneath it there is a painless, round or oval punched-out ulcer with necrosis in the center and around the margins of the lesion. The presence of ulceration and infection often leads to gangrene, and amputation may become necessary.

All the patients in the Cleveland study had evidence of peripheral neuropathy, and all of the lesions were infected. The average age of the 30 patients was 62.7 years, and it was assumed that most of the group had peripheral vascular disease, though intermittent claudication was not commonly encountered. Most of the patients had histories of unsatisfactory ambulant treatment of the foot lesions for months or years.

The following plan of management was formulated for all diabetic patients with infection, ulcer or gangrene of the feet:

1. The patient must be admitted to the hospital and kept at absolute bedrest. The lower extremities are maintained in a horizontal position in the bed. Elevation of the extremities increases the ischemia, and a dependent position produces edema.

2. Pain is relieved by appropriate analgesics or narcotics. Anxiety may require the administration of tranquilizing drugs.

3. A light-cradle, with one or two 25-watt bulbs adjusted to maintain a constant temperature of 90° to 95°F. and covered with the bed clothing, is kept over the feet at all times. By this method of exposing the feet to the air, the extremities are kept dry, and in this environment it is thought

* Post, H. J., Goodman, J. I., Silver, A. G., and Frank, I. H.: Management of diabetic foot lesions. *OHIO STATE MED. JOURNAL*, 59:488-491, (May) 1963.

that maximal vasodilatation and collateral circulation are permitted.

4. Conservative debridement is essential to healing, but this should consist only of removal of non-viable callus and necrotic tissue. Soaks, powders and ointments should be scrupulously avoided. Abscesses should be incised promptly.

5. Careful control of the diabetes by diet and by the use of insulin or an oral hypoglycemic drug is an important aspect of treatment.

An exceedingly important phase of therapy is to educate diabetic patients in the prophylactic care of the feet and to imbue them with the hazards of mechanical, chemical and thermal trauma. In the judgment of the Mount Sinai Hospital group, all foot care except for daily hygiene should be done by a well-trained podiatrist. The total care of the diabetic patient is the responsibility of the physician.

From their experience, the Cleveland physicians conclude that the above-mentioned methods employed in the treatment of ulcerative lesions of the foot are encouraging, and in their judgment have proved effective in the preservation of the extremities.

YOUNG MARRIED COUPLES AND THEIR PARENTS

The physician, the clergyman, the attorney and the psychiatrist can attest that friction between parents and their married children is a serious and common problem. What should be a delightful and reciprocally enriching relationship between successive generations is all too frequently an estranged one which results in much unhappiness and which, on occasion, has unfortunate consequences.

The preparation of the parents and the married child for new roles should be a natural consequence of the progressive steps which have helped the child to become a mature adult and which have emancipated him or her from parental apron strings. This grown-up status is not suddenly and automatically conferred upon the young couple when they return from their honeymoon, but is the result of wise preparation by their respective parents, and an acceptance on the part of both sets of parents and of the son and daughter of their changing roles.

It is fitting that parents and married children alike should take inventory of their relationships, their attitudes, their prejudices, their resentments, and *their blessings*. If the relationships are not all that they should be, what is the basic cause? The family physician is frequently called upon to counsel with a family about this problem, to act as arbiter between the two generations and to smooth troubled waters. His is a challenging

role—an opportunity to restore harmonious relationships and to assist in the solution of family problems.

Much has been written for the benefit of the older generation. The standard advice to them is "to keep one's hands off and one's mouth shut." A wise mother of three married daughters has added a third admonition: "Keep one's purse open." Parents must make adjustments, including a redefinition of their purpose and a marshalling of their resources to assure that their lives, more or less apart from that of their son or daughter, may continue to be meaningful and useful. Children must be permitted to lead their own lives freed from parental domination and direction. Parents should give their children moral support and, according to their means, financial support when necessary. Meddling in the lives of their children is the most common criticism directed against the older generation. Inquisitions concerning social activities, friends, finances, etc. are resented by young people. Interference with the management and the discipline of grandchildren is a justifiable complaint voiced by many sons and daughters. Insistence by a mother or a mother-in-law on a telephone report at a fixed hour each day or the arbitrary demand for a dinner hour or an evening devoted to the older couple are causes of friction. There should be no imposed obligations; rather, a wholesome and natural spontaneity should prevail. Mutual affection, mutual respect and mutual consideration will build a rich and equally rewarding relationship.

There has been a paucity of advice written for the younger generation of married couples concerning their relationships with their two sets of parents. In their roles as husband and wife, they are naturally engrossed in their own lives together and in establishing a home and family. Their parents are relegated to a secondary place in their lives, and this is a natural consequence if the children have been emancipated wisely. This does not imply indifference or disregard for parental feelings or needs. A daughter-in-law must avoid a "chip on shoulder" attitude toward her husband's parents, and a son-in-law should not be influenced by the unfortunate mother-in-law image which has become a matter of ridicule in this country. It is not unreasonable to expect courtesy and concern for the welfare and happiness of the parents. Interest in the grandchildren should be encouraged and can prove to be mutually gratifying. Grandmothers and grandfathers have much to give to grandchildren, besides things material and pecuniary. The idiosyncrasies, the handicaps, the sensitivities of older people should be treated with patience and tenderness. Parents are entitled to the same kindness and the same understanding that are accorded any friend.

Wise counsel is worth a barrel of tranquilizers. The time the physician spends in helping succes-

sive generations solve their conflicts will be most rewarding.

IOWA

You may talk about the mountain breeze
And the odor of the pine,
The glory of the Rockies
And the castle guarded Rhine;
But for me a field of clover
Where shattered sunbeams gay
Caress a sea of fragrant bloom
In dear old Iowa.

You may sing about the lotus bloom
Where tropic waters dance,
And lilies fair beyond compare
In vales of sunny France;
But for me a rolling prairie
Where the fragrant zephyrs play
Like angels round the throne of God
In dear old Iowa.

The ocean spray is life they say
To men of shattered will,
The balmy south in winter time
Makes languid pulses thrill;
But for me the upland hillsides
Where winter winds hold sway
And snowdrifts bridge the hollows
In dear old Iowa.

The fertile valley of the Nile
Is famed in story old,
The Yukon's turbid waters
Rush across its sands of gold;
But for beauty find the valley
Where the Wapsie winds its way
Or the lazy Boone goes dreaming by
In dear old Iowa.

D.M.K.

Injuries From Falls Show Increase in Rural Accident Survey

Falls replaced machinery as the leading cause of accidents in the second reporting phase of a six-county Rural Family Accident Study being made by the Institute of Agricultural Medicine at the State University of Iowa. Data from 400 accidental injury reports during the period January 1 to March 31 revealed that falls accounted for 31.5 per cent of the injuries; autos for 14.75 per cent; and machinery for 9 per cent. Reports came from Cedar, Iowa, Johnson, Linn, Muscatine and Washington counties.

In an earlier report covering August through December, machinery was the cause of 25.5 per cent of the 416 accidents reported. Falls caused 12 per cent of the injuries, and auto accidents caused 10.1 per cent of the injuries. The changes in injury causes were attributed to the increase of falls because of winter weather. The study also revealed

an increase in the number of fractures, and this was also attributed to falls due to winter weather and bad surface conditions.

Directing the survey from the Institute in Iowa City are Clyde M. Berry, associate director of the Institute; L. W. Knapp, chief of the safety division, and William H. McConnell, Jr., safety engineer and field director for the study. Statistics include both farm and non-farm accidents in the six counties, but persons living in towns of more than 2,500 population are excluded.

Injuries most frequently reported in the January-March period were lacerations, fractures, contusions and sprains, in that order. Head injuries increased almost 50 per cent over the August-December period. Injuries to the upper extremities resulted from 27.4 per cent of the reported accidents and 22.2 per cent involved head injuries.

The largest number of accidents, 79, happened to persons in the 25 to 44 age group. During the previous period, 82 persons in the group suffered accident injuries. Individuals in the 6 to 16 age group were involved in 78 accidents. The 45 to 64 age group had the most injuries, 90, in the previous report, but 53 injuries were reported for that age group in the latest study.

The greatest number of accidents, 58 and 59, occurred on Monday and Friday. As in the previous report, there was a general increase in number of accidents from Sunday through Saturday. The lowest accident day was Wednesday with 35.

A primary objective of the study is to provide a picture of the most frequent types of accidents encountered by rural families. More detailed studies of these accidents will then be made by the Institute staff to find the causes and possible measures to prevent such mishaps. Officials praised the cooperation of physicians, hospitals and other sources in reporting accidents to the Institute. They said the physician is the only substantial resource for dealing with certain aspects of the accident problem and that he can make unique contributions to safety aspects.

Course in Laryngology and Bronchoesophagology

The Department of Otolaryngology, University of Illinois College of Medicine, will conduct a post-graduate course in Laryngology and Bronchoesophagology from September 16 through 28, 1963, under the direction of Paul H. Holinger, M.D.

Registration will be limited to fifteen physicians who will receive instruction by means of animal demonstrations and practice in bronchoscopy and esophagoscopy, diagnostic and surgical clinics, as well as didactic lectures.

Interested registrants should write directly to the Department of Otolaryngology, University of Illinois College of Medicine, 1853 West Polk Street, Chicago 12, Illinois.

President's Page

It certainly is gratifying that a large majority of county medical societies have reactivated their King-Anderson committees. Last year, those committees were invaluable in stimulating opposition at the community level to the Administration's plan for financing health care for the aged through Social Security. Once again, their help is very much needed.



"Operation Hometown" is an up-to-date, comprehensive program developed by the AMA for use by county King-Anderson committees, and if it is used in all parts of the United States, it will contribute significantly to the defeat of the King-Anderson Bill, 1963 version.

Very possibly the Ways and Means Committee of the U. S. House of Representatives will hold hearings on the King-Anderson Bill in late July or early August, 1963. If physicians follow the suggestions included in the "Operation Hometown" kit, they can bring the true story of health care for the aged forcibly to the attention of the members of Congress.

But only through the prompt efforts of every physician, at the grass-roots level, can the King-Anderson proposal again be defeated!

C. W. Edwards, Sr.

President

THE JOURNAL *Book Shelf*



BOOK REVIEWS

HANDBOOK OF PEDIATRICS, FIFTH EDITION, by *Henry K. Silver, M.D., C. Henry Kempe, M.D., and Henry B. Bruyn, M.D.* (Los Altos, California, Lange Medical Publications, 1963. \$4.00).

This valuable handbook of pediatrics has had tremendous success since the first edition of it appeared in 1955. The fifth edition continues the remarkable style that permits an incredible amount of material to be printed in one pocket-size volume. The outline method has been continued, and very practical tables and charts are interspersed for the purpose of leading the student of pediatrics to other sources for further information. The cross references provided in the outline add much to its value.

This handbook certainly cannot be regarded as a substitute for a pediatrics text, but it is superb as a quick reference. It is highly recommended to medical students, internes, pediatrics residents and practicing physicians.—*M. E. Alberts, M.D.*

MALPRACTICE LAW DISSECTED FOR QUICK GRASPING, by *Charles L. Cusumano.* (New York City, Medicine-Law Press, Inc., 1962. \$10.00).

This is a clear, comprehensive presentation of the various facets of malpractice of which the members of our profession may be accused.

Rather than to make the physician a legal expert, the book is intended to make him clearly aware of the history, present status and probable future evolution of that segment of our law that applies peculiarly to the practice of medicine.

In addition to some interesting case presentations, the author has included many suggestions intended to prevent malpractice suits, to prevent the physician from compromising his own defense, and to enable him to participate intelligently in the courtroom procedures.

This reviewer feels that Mr. Cusumano's recommendations concerning the use of written contracts to define the doctor-patient relationship are far-fetched and currently impractical, for most patients would view them with the utmost suspicion. The author's thoughts do, however, provide an interesting glimpse of what the future may hold in store for both doctors and patients.

All in all, this is a well-written, comprehensive presentation that contains practical suggestions never before available to doctors of medicine. It should be required reading for all physicians, and in particular for senior medical students prior to their entry into practice.—*K. H. Strong, M.D.*

LIVING WITH EPILEPTIC SEIZURES, by *Samuel Livingston, M.D.* (Springfield, Illinois, Charles C Thomas, 1963. \$6.50).

In the preface of this book, the author states that his primary purpose is to provide information on epilepsy to non-medical persons such as patients and/or their parents, as well as educators and counselors. Certainly he has presented pertinent information relative to the differentiation of different types of disorders, the diagnostic procedures that are utilized by the medical profession, the therapeutic drugs that are available and the general management of the epileptic patient. He also discusses such things as rehabilitative services that are available, he covers the various socioeconomic problems which may confront the patient, and he presents a general brief summary of the hereditary and other more personal aspects of the disability.

The book is very well written, and adequate references have been provided. However, it seems to me that in some areas the content may be too complex for the average lay person to comprehend completely. It might be well for the patient and/or his parents to utilize it in conjunction with their physicians, as they discuss various ones of their problems.—*M. E. Alberts, M.D.*

BOOKS RECEIVED

APPLIED ANATOMY OF THE EYE, by *Alfred Kestenbaum, M.D.* (New York, Grune & Stratton, 1963. \$12.50).

MARGIN OF SAFETY, by *John Rowan Wilson, M.D.* (Garden City, N. Y., Doubleday & Company, Inc., 1963. \$4.95).

THE SPECIFICITY OF SEROLOGICAL REACTIONS, REVISED EDITION, by *Karl Landsteiner, M.D.* (New York, Dover Publications, Inc., 1962. \$2.00).

NURSING CARE OF THE LONG-TERM PATIENT, by *Jeanne E. Blumberg, R.N., and Eleanor E. Drummond, R.N.* (New York, Springer Publishing Company, Inc., 1963. \$...).

THE CARE OF MINOR HAND INJURIES, SECOND EDITION, by *Adrian E. Flatt, M.D.* (St. Louis, The C. V. Mosby Company, 1963. \$10.50).

CLINICAL GASTROENTEROLOGY, SECOND EDITION, by *Eddy D. Palmer, M.D.* (New York, Hoeber Medical Division, Harper & Row, Publishers, 1963. \$22.50).

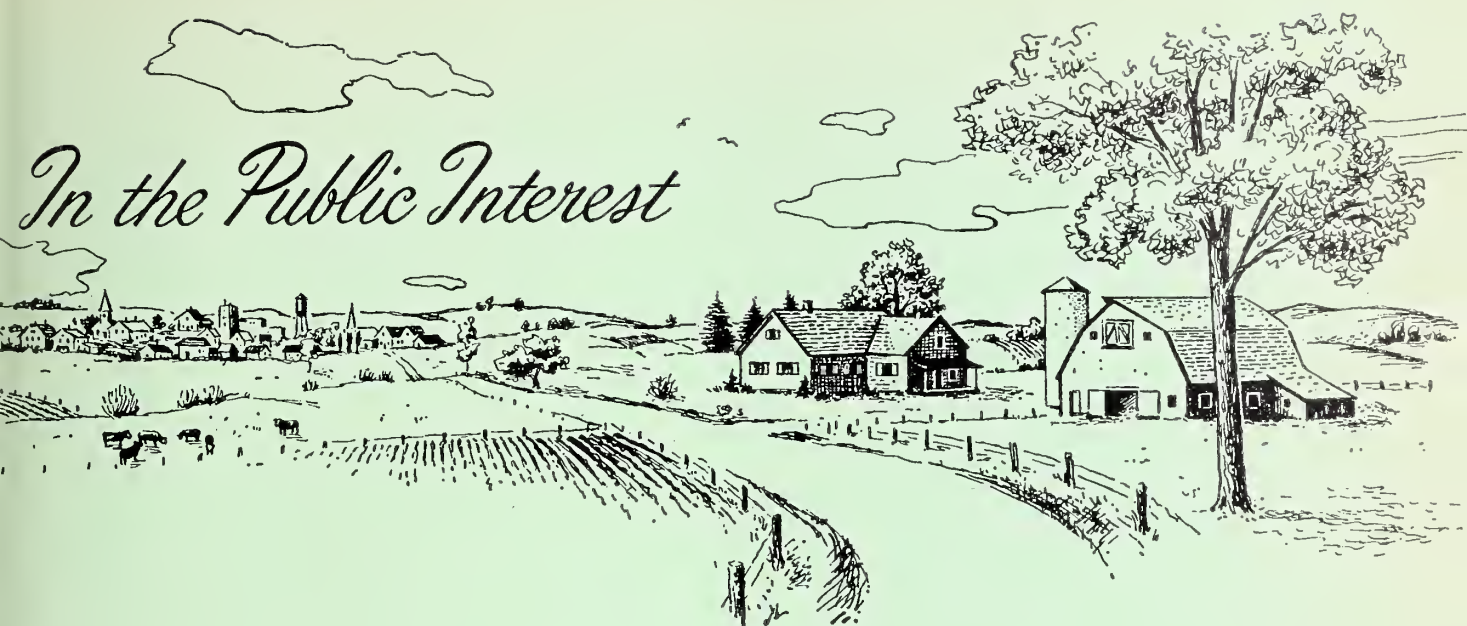
CURRENT PSYCHIATRIC THERAPIES, VOLUME III, ed. by *Jules H. Masserman, M.D.* (New York, Grune & Stratton, 1963. \$9.75).

THE RISK TAKERS, by *Hugh McLeave.* (New York, Holt, Rinehart and Winston, Inc., 1963. \$4.50).

NEW AND NONOFFICIAL DRUGS, 1963, evaluated by the AMA Council on Drugs. (Philadelphia, J. B. Lippincott Company, 1963. \$4.00).

MEDICINE AND THE STATE, by *Matthew J. Lynch, M.D., and Stanley S. Raphael, M.B.* (Springfield, Ill., Charles C Thomas, 1963. \$9.75).

INTERNAL MEDICINE IN WORLD WAR II: VOLUME II—INFECTIOUS DISEASES, ed. by *Col. John Boyd Coates, Jr., MC, and W. Paul Havens, Jr., M.D.* (Washington, D. C., Office of the Surgeon General, Department of the Army, 1963. \$...).



In the Public Interest

Iowa Doctors Engage in Many Civic Activities

Increasingly, each year, the Iowa Medical Society, its constituent county organizations, and individual physicians throughout the state are starting or sponsoring worthwhile civic activities of various sorts, and are cooperating ever more closely with public and private groups having objectives that resemble their own. A review of the reports presented and the plans approved at this spring's IMS Annual Meeting makes this abundantly clear.

RECRUITING FOR THE HEALTH PROFESSIONS

Organized medicine, during the past year, has increased its efforts at securing more young people for medicine, nursing and the various paramedical technologies. At the national level, with funds provided by physicians throughout the country, the AMA inaugurated a loan program for medical students this past year. For a long time, of course, the Iowa Medical Society has made loans to medical graduates at S.U.I. from money supplied by Iowa doctors. The students who have been aided in this way now total 165, of whom 45 have repaid the sums borrowed and 110 have loans outstanding that total \$150,422.31. The IMS Woman's Auxiliary lends to students of nursing and allied occupations.

As a member of the Iowa Interprofessional Association, the IMS secures materials on medical and paramedical careers, and helps to staff booths at fairs and at the state teachers' convention, so as to put them into the hands of high school students. Several local medical societies or groups of physicians—notably the ones in Davenport, Cedar Rapids, Ames and Creston—sponsor Future Doctors Clubs or invite high school and college students to meet with them and to hear prominent speakers

on medicine as a career. The IMS Auxiliary sponsors about 65 Future Nurses Clubs in high schools throughout the state, in which approximately 1,500 girls are enrolled. In addition, the IMS and local groups of physicians help to sponsor science fairs at Des Moines, Cedar Rapids and Cedar Falls, and contribute some of the scholarships and other prizes that are awarded to the winning exhibitors there. They are especially pleased to see that considerable numbers of students are thus being encouraged to study the biological sciences intensively.

SAFE TRANSPORTATION

To reflect a broadening of its objectives, the IMS Committee on Automotive Safety has recently been renamed the Committee on Safe Transportation. This group—and more importantly a great many physicians—will soon have completed three-quarters of a two-year Cornell University Automotive Crash Injury Study, in cooperation with the State Highway Patrol and local hospital personnel. The findings, together with ones gathered in other parts of the country, will be used in making automobiles and highways safer. The Committee expects shortly to consult with officials of the State Department of Public Safety on changes in the driver's license examination and other measures that will do a better job of keeping poor drivers off the roads.

The IMS makes films on safe driving available free of charge to schools, and teachers are invited to request further information about them from the IMS at 529-36th Street, Des Moines 12.

The Society and its Auxiliary interest themselves in other aspects of safety, as well. Currently, they are publicizing the need for tetanus and smallpox immunizations and polio booster shots,

and are working to reduce the numbers and severity of farm and home accidents.

COOPERATION WITH THE OSTEOPATHIC PROFESSION

Some significant steps have been taken toward the establishment of working relations between doctors of medicine and osteopathic physicians and surgeons. As of April 7 of this year, the IMS Judicial Council had designated 21 osteopathic physicians and surgeons as ones "with whom it shall not be unethical for doctors of medicine to associate professionally," and applications from an additional 53 had been passed upon favorably by the county medical societies and were awaiting Judicial Council consideration. Indeed a majority of O.P. & S. licensees, at that time, had applied for evaluation or had already been approved, and among the osteopathic physicians—a less fully and scientifically trained group—there seemed to be a trend to take the necessary steps to qualify for O.P. & S. licenses and thus to make themselves eligible for the IMS accreditation program.

The most recent of the steps toward cooperation between the two professions was the Legislature's enactment of a composite licensure board. The provisions of the statute were reviewed on the "green sheet" in the June JOURNAL OF THE IOWA MEDICAL SOCIETY. Henceforth, new graduates of osteopathic schools must have received O.P. & S. training and must pass the same tests as medical school graduates if they are to be licensed in Iowa.

HEALTH EDUCATION ACTIVITIES

As in previous years, the IMS and several of the larger county medical societies conducted public forums on medical topics of popular interest; provided authoritative speakers for, or sponsored, several series of radio and television programs on such topics; and, through the IMS Speakers' Bureau, arranged to have doctors address almost innumerable meetings of service clubs and fraternal organizations. The IMS worked for the passage of an adequate Kerr-Mills appropriation by the 1963 General Assembly, and for the adoption of the fiscal-agent method of administering the program—one which will help make sure that it achieves all of its purposes.

The IMS Auxiliary is continuing to provide high school teachers and leaders of youth groups in churches with a set of instructional materials called "Milestones to Marriage" which are designed to prevent many of the difficulties that are responsible for our country's rising divorce rate.

In May, 1962, together with the AMA, the IMS conducted an 11-state rural health conference in Des Moines, and plans are now being made for a meeting in the fall of 1963, also in Des Moines, at which the public will be shown and warned against some of the various forms of quackery.

IMPROVEMENT OF PATIENT CARE

Progress reports were presented during the IMS Annual Meeting on a number of projects designed to protect patients' pocketbooks and to assure their getting the best of care. As someone has aptly remarked, "It is doctors who use hospital beds; patients only lie in them." For this reason, physicians have a major responsibility for getting people up and about after surgery, as promptly as is consistent with their recovery; for sending them to the hospital for tests only when the procedures can't satisfactorily be performed in the doctors' offices; and for exerting pressure upon the relatives, if necessary, to arrange for the patients' convalescence outside of the hospital as soon as it is safe for them to leave.

For these purposes, "utilization committees" have been established by a number of individual hospitals. Like the "tissue committees" the check upon and work at improving surgical procedures at the local level, the utilization committees work to reduce the lengths of hospitalizations. Consideration is also being given to the conducting of spot checks, from time to time, at institutions throughout the state.

So that greater numbers of graduates from the S.U.I. College of Medicine can be induced to prepare for general practice and to stay in Iowa, the IMS is working with the dean of the school, Dr. Robert C. Hardin, on a plan for internships at community hospitals.

AN IMS COMMITTEE TO WORK WITH STATE DEPARTMENTS

To replace its Committee on Public Health, the IMS created a Committee on State Departments at its Annual Meeting in April. This new group consisting of the physicians who are chairmen of other IMS committees having frequent dealings with the State Board of Health, the State Board of Control, the State Board of Social Welfare, etc., will invite representatives of those agencies to participate in its meetings whenever appropriate. This is viewed as the first stage in a thorough reorganization of the 40 or more IMS committees, designed to eliminate overlapping of responsibility and to make for increased efficiency. This initial change, in particular, will facilitate frequent exchanges of ideas and closer cooperation between physicians and state officials on all phases of public health work.

CONCLUSION

The doctors of medicine in Iowa, their professional organizations, and the members of their families endeavor to serve the public in myriad ways, and those that have been mentioned here are no more than a few of them. Physicians firmly believe—and they hope their fellow citizens will agree—that all of their activities are truly *in the public interest*.

HIGHLIGHTS OF IMS OFFICERS' MEETINGS

BOARD OF TRUSTEES
May 16, 1963

Councilor Appointments. The Board was informed that F. G. Ober, M.D., Burlington, had accepted appointment to serve as Councilor, 8th District, replacing J. H. Sunderbruch, M.D., and that W. M. Krigsten, M.D., had accepted an appointment to serve as Councilor, 4th District, replacing M. A. Blackstone, M.D. These appointments will be effective until the 1964 Annual Meeting.

Iowa Medical Foundation. On authority of the House of Delegates, the IMS has established the Iowa Medical Foundation. This new instrumentality will continue the medical-student loan program that previously has been conducted by the IMS Educational Fund, and in addition will finance or subsidize postgraduate medical education courses and programs, and public service activities that have a close relationship to medicine and health. Specific projects will be announced as soon as possible.

Gifts and bequests to the Iowa Medical Foundation will be tax exempt, and several have already been received.

EXECUTIVE COUNCIL
May 16, 1963

Legislative Report. The chairman of the Committee on Legislation reported on the actions of the 1963 General Assembly of Iowa. His remarks were the basis for the "In the Public Interest" (green sheet) in the June issue of the JOURNAL OF THE IOWA MEDICAL SOCIETY, and all physicians who missed seeing it are urged to look for it and read it.

Implementation of Kerr-Mills. The Council was informed that the Legislature's authorization for an MAA program will become effective on July 4, 1963. It was announced that the Kerr-Mills Advisory Council would meet on June 5 to develop recommendations for implementing the MAA program in Iowa, which would then be submitted to the State Board of Social Welfare for consideration. It was pointed out that the IMS representative to the Kerr-Mills Advisory Council must receive guidance and counsel from the Society concerning the type of program which would be acceptable to the physicians of Iowa, prior to June 5.

Following a lengthy discussion, the Council took the following actions in reference to this matter:

1. An emergency meeting of the IMS Subcommittee on Public Assistance should be scheduled immediately in order to develop specific recommendations and guidelines regarding implementation of the MAA program in Iowa, with particular reference to participation of physicians. The IMS representative on the Kerr-Mills Advisory Council should also be present at this meeting.

2. Following the meeting of the Public Assistance Subcommittee, a report of its deliberations should be transmitted to members of the Executive Council, along with other source material.

3. The Executive Council should meet on or before June 4, with the members of the Public Assistance Subcommittee, and with the IMS representative on the Kerr-Mills Advisory Council, to consider recommendations regarding the MAA Program submitted by the Subcommittee on Public Assistance, and, if deemed advisable and appropriate, develop specific

recommendations and guidelines to be followed by the IMS representative on the Kerr-Mills Advisory Council.

Operation Hometown. The chairman of the IMS King-Anderson Planning Committee told the Executive Council that state medical societies have been requested by the AMA to coordinate "Operation Hometown," a national legislative program for county medical societies, designed to offset the mounting pressure for King-Anderson legislation in the 88th Congress. He explained that the program is divided into seven sections—county campaign chairman coordination, county speakers bureau, enlisting allies, newspapers-radio-television, materials distribution, congressional contacts and letter writing.

General Practitioner Award. The Executive Council was informed that an Outstanding General Practitioner of the Year was not elected at the 1963 Annual Meeting since only one candidate was nominated, and the reference committee did not have a basis for comparison. On recommendation of the Reference Committee on GP Award, the House of Delegates authorized the Executive Council to study the feasibility of discontinuing the presentation of an annual IMS GP Award, in conformity with an action taken by the AMA to abolish the National General Practitioner of the Year Award. Following discussion, the Executive Council approved a motion to abolish the IMS General Practitioner of the Year Award, beginning in 1964.

Medical Education and Hospitals. A final report on compensation of internes and residents was to be presented at the Annual Meeting of the AMA, in Atlantic City on June 16-20, 1963. The original report presented by the AMA Council on Medical Education and Hospitals and Council on Medical Service at last November's clinical meeting in Los Angeles was substantially as follows:

"1. The need for reform is supported by the following factors: competition for talent by other professional and scientific fields, the increasing cost in time and money of the total educational experience of the student of medicine, the increasing cost of living for the young physician and his family, and the changed economic status of the hospital patient population.

"2. Since patients capable of paying for medical services necessarily are now becoming of increasing importance to the training of house officers, this results inevitably in interns and residents providing medical services for which professional fees are available. Fees attributable to services provided by house officers to paying patients should be collected for and allocated to the financial support of graduate training programs, including salaries for house officers.

"3. Eight principles have been developed governing the relationship of house officers to patients for whose care compensation is received, and are as follows:

"a. The number of patients assigned to house officers shall be limited by the educational needs of the intern and residency program; such patients will continue to be seen by the attending staff physician and ultimate responsibility for their care will remain in his hands.

"b. Assignment of responsibility to house officers for the care of patients shall be based on their competence to assume this responsibility.

"c. Paying patients should be assigned to the house staff by the attending physician only with the knowledge and consent of the patients concerned.

"d. When the house staff has such an assigned role in

the medical care of paying patients, all applicable fees shall be collected and shall be deposited in a special fund.

"e. The special fund shall be administered by a committee of the attending staff.

"f. The fund shall be used exclusively in support of intern and resident training programs, including salaries for house officers.

"g. The fund shall not be used for support of the general operations of a hospital, medical school, university, or welfare department.

"h. Compensation arising from this fund for any individual intern or resident shall not be related directly to fees collected for the services rendered by him.

"4. While the educational experience is a major consideration in a young physician's choice of internship and residency, he should receive a salary which will enable him to support himself and his family without the necessity of resorting to outside help or work. A specific minimum salary cannot be set in view of geographic and other differences between hospitals, but cost-of-living studies might be used as guides in the development of appropriate salaries.

"5. The major beneficiaries of house officer service are the patient, the community, the hospital, and the attending staff. Each of these has an obligation regarding the adequate support of the house staff.

"6. The community, and particularly its medical component, have an opportunity and responsibility to influence those concerned with the operation of third-party prepaid medical care plans, to assure that income from such plans be made available for the support of graduate training programs when house officers deliver the services for which fees are provided under those plans.

"7. The attending staff of the hospital is responsible for a determination of the level and method of compensation of house officers for that portion of their services to paying patients which are purely of a professional nature, and the hospital corporate body is responsible for a determination of the level and method of compensation of house officers for services which are of an administrative or educational nature pertaining to the normal obligations of a hospital.

"8. A variety of methods may be developed for providing more adequate house officers' salaries. Specific details of such plans must be developed locally through the mutual efforts of the hospital attending staff, the hospital governing body, third-party health insurance groups, and welfare and other community agencies.

"9. In developing an appropriate method for improving the salary level of house officers, any possible increased costs are a concern of the hospital, the attending staff, and patients in relation to the benefits each received from services of the house staff.

"10. The Committee on Medical Education and Hospitals was interested in one suggested type of plan already in operation in several hospitals, in which house officers might become employees of a partnership of the hospital attending staff. If such suggested plans were to be adopted, the present difficulties in collecting fees from third-party prepayment plans might be eliminated since the partnership would be permitted to bill and collect fees ethically and legally for services of its employees, there would be no requirement that interns and residents so employed must be licensed by the state in which the hospital is located

unless state laws specify otherwise, and the hospital corporate body would be able to contribute its appropriate share of the compensation of house officers into the special fund for support of the graduate programs.

"11. Whatever method of employment for house officers is developed, the responsibility of the hospital governing body and the hospital attending staff should not be altered with reference to appointment of qualified interns and residents to the house staff. Methods of employment or compensation should not alter in any way the educational values of the programs or the standards by which they are evaluated, approved, and listed in the **DIRECTORY OF APPROVED INTERNSHIPS AND RESIDENCIES**.

"12. Reform of the traditional level and method of financial compensation of house officers is vital for recruitment of medicine in the future; it is essential for the health care of the American public in assuring that all future physicians receive the full degree of training which they desire. It is in the best medical tradition that the medical profession be primarily responsible for assuring an adequate future supply of physicians."

The IMS Committee on Medical Education and Hospitals has not made specific recommendations regarding this matter, but it does believe that extreme care must be exercised in the development of any program involving compensation for interns and residents in order to protect the fiscal soundness of the hospitals.

At the IMS Executive Council meeting on May 16, 1963, it was pointed out that approval of the AMA report, in its present form, would eventually permit the corporate practice of medicine by hospitals, and would enhance the possibility that internes and residents might select hospitals on the basis of the compensation they offered, rather than for the quality of training programs they could provide. It was agreed that the IMS should oppose adoption of the joint report of the AMA Councils regarding compensation of internes and residents.

The Executive Council was informed that R. N. Larimer, M.D., of Sioux City, had been nominated for membership on the AMA Council on Medical Education and Hospitals. Dr. Larimer is chairman of the IMS Committee on Medical Education and Hospitals. The Executive Council heartily endorsed Dr. Larimer's candidacy, and instructed the IMS delegates to the AMA to support his election.

Vexatious Litigation. The Executive Council was reminded that the House of Delegates had approved the preparation of a resolution on vexatious litigation, based on a resolution emanating from the Marion County Medical Society, to be submitted to the AMA House of Delegates in June.

The "resolved" portion of the proposed resolution was as follows:

Resolved, That the AMA prepare a bill, to serve as a model for any state medical society wishing to enact such legislation, to provide (1) that the losing party to a lawsuit must pay the winning party all his expenses, including those for the necessary services of a lawyer; (2) that the poor man, if he has a legitimate case, be enabled to sue; and (3) that some predetermined fee shall be established or some regulation made as to the fees the losing party pays the other attorney.

Bierring Memorial Fund. The Executive Council was notified that an Iowa committee has been formed to create a memorial to the late W. L. Bierring, M.D., and it hopes to raise approximately \$20,000 in contributions to remodel and furnish the conference room of the State Department of Health, State Office Building. A

letter providing specific information on the proposed memorial will be transmitted to all members of the IMS in the near future. Members of the allied health professions are also to be contacted, in addition to a number of Dr. Bierring's friends and colleagues throughout the country.

1964 IMS Annual Meeting. The Executive Council was informed that the Board of Trustees has selected the Hotel Fort Des Moines, Des Moines, Iowa, as the site for the 1964 Annual Meeting of the IMS, which is to be held April 26-29. It was also reported that the Board will consider various methods of enhancing attendance at scientific and technical exhibits, and will study the most convenient meeting arrangements for sessions of the House of Delegates.

EXECUTIVE COUNCIL

June 4, 1963

Dr. Edwards reviewed the recommendations which the Subcommittee on Public Assistance had developed at its meeting on May 23 for an Iowa MAA program.

It was pointed out that the Kerr-Mills Enabling Act sets forth eligibility requirements, but scope of services to be provided will be determined by the Board of Social Welfare. In this connection, it was explained that the Kerr-Mills Advisory Council can influence to a great extent the final decision of the Board of Social Welfare as it develops rules and regulations for implementing the MAA program in Iowa.

Dr. F. C. Coleman said that the Kerr-Mills Advisory Council, on which he is the IMS representative, would consider the following items at its meeting on Wednesday, June 5:

1. Scope of services to be covered under the MAA program.
2. Fee schedules to be used in paying for services.
3. Mechanism for implementing the fiscal agent.

Dr. Coleman also reported that the Advisory Council would probably be requested to meet with the State Board of Social Welfare within 10 days, and that Mr. Lawrence Putney, chairman of the Board, had indicated the program will be in operation within the next three months.

Following a lengthy discussion, the Executive Council passed the following motions in specific reference to implementation of the MAA Program in Iowa, and physician participation in it:

1. That the Iowa Medical Society continue to provide leadership in the provision of care for the sick, needy aged in Iowa, through implementation of the Kerr-Mills program.
2. That, under the MAA Program, all physician services (M.D.'s) be paid for when treatment of illness or injury is necessary and the recipient is certified by the

attending physician, and when \$50 expense for medical care has been incurred; further, that difficult cases requiring unusual fee determinations be referred to the appropriate county society or state society committee for review.

3. That physicians charge their usual fees, with the understanding that the fees may be discounted at a percentage rate comparable to the reduction accepted by other vendors participating in the MAA program.

4. That the fiscal agent to administer the MAA program be selected on the basis of competitive bidding.

Dr. Edwards indicated that the Executive Council will be consulted again before any final commitments are made relative to physician participation in the MAA program in Iowa.

Congenital Heart Defects Booklet Updated

The American Heart Association has issued a revised and expanded edition of a booklet designed to aid physicians in preparing parents of children with inborn heart defects for events that may follow the preliminary diagnosis.

The publication, **IF YOUR CHILD HAS A CONGENITAL HEART DEFECT**, now describes nine defects which are considered operable—two more than were included when the first edition was published in 1960. The newly included defects are transposition of the great vessels and tricuspid atresia. Also described are coarctation of the aorta, patent ductus arteriosus, atrial and ventricular septal defects, tetralogy of Fallot, and aortic and pulmonary valvular stenosis. Diagrams of the different conditions are included, as well as a diagram of the normal heart on which the physician may wish to sketch the individual patient's defect. In addition, the booklet outlines diagnostic, operative and post-operative procedures and notes some of the community resources available to help the child and the parents.

Physicians and other professional workers may request copies of the booklet from the Iowa Heart Association, 2100 Grand Avenue, Des Moines 12, Iowa, or through their local Heart Association.

Leaflets on Diabetes for Doctors' Waiting Rooms

DIABETES—WHAT YOU DON'T KNOW CAN HURT YOU, a new pamphlet for distribution through doctors' waiting rooms, has just been introduced to the medical profession by the Ames Company, Inc., of Elkhart, Indiana. Designed for the physicians' patients, it deals frankly with the signs and symptoms of diabetes and with the importance of detecting diabetes early. Attention is called to the 1,500,000 unknown diabetics, the warning signs of diabetes and the dangers of untreated diabetes.

An initial mailing to over 80,000 physicians contained an order card which the physician could return for a quantity of the pamphlets in a stand-up rack for his waiting room.

Help your central office to maintain an accurate mailing list. Send your change of address promptly to the Journal, 529-36th Street, Des Moines 12, Iowa.

Hearing Conservation

Hearing Disturbances in Allergic Children

VICTOR L. SZANTON, M.D., F.A.C.A.,
and WILLETTE C. SZANTON, M.A.
Derby, Connecticut

A school hearing test in March showed that David T., age seven, had a moderate degree of deafness. Noting that he had a "cold" at the time of testing, however, the school nurse discounted the results, and scheduled him for retest. Pupil loads being what they are, David's retest came the following March. Results, and health picture, were much the same as before. The otologist who saw him on referral two months later found scarcely any disturbance of hearing, and advised Mrs. T. to "wait and see." In the last week of September of the same year, David's hearing, retested, was demonstrably superior. This should have closed the case, proving once more, as so often claimed, that hearing tests on young children are notoriously unreliable. One more test was performed, however, just 10 days later. Suddenly, a degree of loss similar to that demonstrated the previous March was back with David again. By which test should the confused family and school be guided?

SCHOOL TESTS OFTEN MISS TRANSIENT HEARING LOSSES

It is one of the purposes of this presentation to demonstrate that although these results seem to be mutually contradictory, they are, in fact, all accurate and reliable measurements of function in a boy *who varies*, with variations in his environment. Cutaneous testing confirmed the clinical history; David was sensitive to house dust. Symptomatically and by cutaneous testing, he was not sensitive to ragweed. On October 3, between the test showing excellent hearing, and that again showing a hearing loss, the hot air heat had been turned on in David's home.

In 1958, Wishik, Kramm and Koch,¹ citing their eight-year study of school children in Reading, Pennsylvania, reported hearing tests on 1,726 chil-

dren. They stressed the frequency of short duration hearing loss and suggested that the usual biennial interval for school hearing surveys is too long. Although these authors were concerned with factors other than etiology, and did not relate their findings either to seasons of heightened allergenic stress, or to otologic symptoms, note was made of histories indicating "the frequent existence of nasopharyngeal infection." They recommended that hearing tests be given to any child "when infections or allergic involvement of ear, nose or throat are frequent or excessive." A seemingly unrelated finding of this excellent and many-faceted study is that among children five to seven years of age who "failed their first audiometric tests, 48.4 per cent failed later tests." The unstated corollary of this observation is that 51.6 per cent of these children overcame or outgrew their hearing disturbance within the eight years of follow-up covered by the report. We are, therefore, presented with two phenomena not customarily recognized in discussions of hearing loss: (1) the intermittent hearing loss of varying intensity and duration, and (2) the hearing loss which disappears as the child grows older.

It is time for an integration of those findings made in the fields of otology, audiology and allergy which, when taken together, will simultaneously explain these phenomena and give new significance to the findings themselves.

ANATOMY AND PHYSIOLOGY

Of first importance is a brief review of the anatomy and physiology of the eustachian tube, best described by Wilson² (Figure 1, A and B): "The eustachian tube is different in infants as compared to adults. In the former (infants), the tube is very much shorter, being less than half the adult length (14 mm. compared to about 35 mm.), while the tympanic orifice and the calibre of the tube are quite as large as in the adult. The tube as a whole, therefore, is relatively much wider than in the adult. The osseous and cartilaginous portions of the tube are very much in the same straight line, whereas in the adult they form an obtuse angle at the junction. The direction of the tube is almost horizontal, the tympanic orifice being practically at the same level as the pharyngeal opening, while in the adult it is 15 mm. higher. The pharyngeal

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opening of the tube at birth is opposite the edge of the hard palate, while in the adult it is at least 10 mm. above this level."

The eustachian tube is a combined ventilating and drainage channel. It is normally closed, and opens periodically to ventilate the tympanic cavity. Its chief function is to maintain an equal air pressure on each side of the tympanic membrane, i.e., in the external and the middle ear. "This is essential to a free-swinging lever system, as a marked difference in pressure between the outer canal and the tympanic cavity tends to lessen the effectiveness of sound vibrations upon the ossicles. The manner in which the air pressure equalization is effected is through the intermittent openings of the muscular portion of the tube which take place simultaneously with the act of swallowing."³

The mechanism and effects of eustachian tube dysfunction should next be noted. Birrell⁴ points out that the result of obstruction of the eustachian tube is that oxygen is absorbed in the middle ear, and negative pressure develops because the air thus lost cannot be replaced until the tube opens. Since air in the external meatus remains at atmospheric pressure, the tympanic membrane becomes in-drawn. This differential loading of the two sides of the membrane results in a conductive deafness, which is called vacuum otitis. The main symptom is hearing loss, usually unassociated with any pain. Following this, exudation of seromucus into the tympanic cavity occurs. The outstanding symptom is then a sensation of fullness in the ear, with transitory tinnitus and hearing loss. This condition is called secretory or serous otitis media, and is a disease entity commonly met with in otologic practice. Revealingly, Armstrong⁵ states that in

his series of 1,016 ears with fluid, 78 per cent occurred in children eight years of age or under. Davison⁶ reports that over 65 per cent of middle ear effusions occur under 10 years of age, and another 16 per cent in the 11 to 21 year age group.

The commonest cause of obstruction of the eustachian tube is an increase of lymphoid tissue in the nasopharynx. The etiology of this hypertrophy being seldom discussed, removal of excessive tissue by surgery or irradiation has been the customary procedure without consideration of causes that may stimulate its regrowth. The matter of etiology has recently been receiving increased attention, however. Clein⁷ has reported a recurrence of lymphadenoid tissue in the tonsillar fossa in 27 per cent of allergic children, as compared with 3 per cent of non-allergic children. Glaser⁸ has the impression that any child who has to have tonsils or adenoids or both removed more than once is an allergic child. Solow⁹ states that one-third of all serous otitis cases which he has investigated are due to allergy, and further that one of the main symptoms of allergic otitis media is a fluctuating hearing loss.

DIAGNOSIS

Kuhn¹⁰ has emphasized the need to search out hearing disorders due to allergy. He stated, as did Solow after him, that the best clue is the variability in the presence and intensity of hearing changes from day to day. He suggested the diagnosis be made from the patient's history, the variability of symptoms over a time, and a base line audiogram followed by a test dose of epinephrine and a repeat audiogram. If the test is positive, i.e., showing subjective changes and an increase in

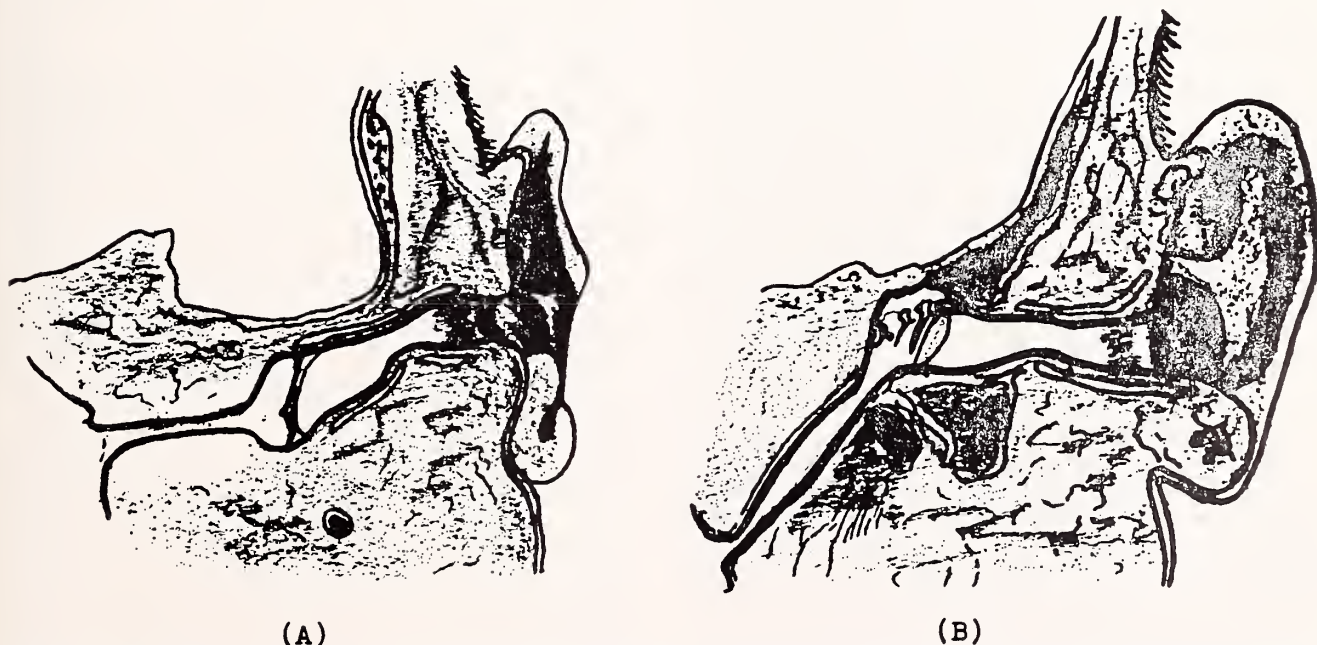


Figure 1. Oblique sections to show the direction of the external auditory meatus and of the eustachian tube (A) at birth, and (B) in the adult. Part A is approximately life-size; Part B is reduced to the same size for comparison.

hearing acuity, the patient should be investigated thoroughly from the allergic standpoint.

Canfield¹¹ points out that not only infection but allergic reaction of the nose, throat and ears can cause hearing loss. This refers to an understanding that the mucous membrane of the eustachian tube is identical in structure and in function with the mucous membrane of the nasopharynx, of which it is an extension.

Derlacki¹² writes: "Allergic involvement of the middle ear is a part of the generalized allergic reaction of respiratory epithelium with selective emphasis upon the mucous membranes of the eustachian tube of the tympanic cavity." It would, therefore, appear that in considering allergy of the mucous membranes of the upper respiratory tract, one should include not only the nasopharynx and the paranasal sinuses but also the eustachian tubes and the mucosa of the tympanic cavity. Dohlman was the first investigator to find eosinophilia of the serous fluid in otitis, and devised the theory that sensitization is induced by a foreign protein—especially cow's milk, the milk being forced up into the middle ear in the usual bottle feeding of babies. The anatomic configuration of the eustachian tube in the infant and young child, differing as it does from that of the adult, enhances the chance for this type of sensitization. In addition, the infant and young individual spends many more hours than the older person in a supine position. Visualizing this in relation to position, width, and straightness of the immature eustachian tubes, we recognize the decrease in tube drainage and the increased opportunity for collection of nasopharyngeal secretions in and about the tubal orifice.

Let us recognize, then, that an interaction exists between the allergic reactivity of the total upper respiratory mucosa (with the well-known fluctuations of severity linked to seasonal and environmental factors), and the developmental dynamics of eustachian tube growth, function and dysfunction. There are variables on both sides of this interaction, but they are predictable variables, and the mode and effects of their interaction are predictable. We are thus better able to understand the frequently non-infectious origins of serous otitis media, and of vacuum otitis with its concurrent, often intermittent hearing loss which tends to disappear as the child grows toward adolescence.

As we have noted, otological literature is replete with reports on the incidence of conductive hearing loss and, though to a lesser degree, we also find allergists reporting on the incidence of allergy as one causative factor in such loss. Case loads in each instance, however, have derived from otologic referrals and are composed entirely of patients who have a demonstrated hearing loss.

THE NEW HAVEN STUDY

With a converse approach to the problem, the investigation here being reported was projected to discover the percentage of hearing loss in a

case load composed entirely of allergic patients. These were drawn from the Pediatric Allergy Out-Patient Department clinic at the Hospital of St. Raphael, in New Haven, Connecticut, and from the private practice of the authors. All were individuals with allergic rhinitis—perennial or seasonal—or asthma, or eczema, or combinations of these syndromes. Allergy was diagnosed on the basis of positive family history, clinical history and findings, nasal smears, and confirmation by positive cutaneous reactions to scratch or intradermal tests or both. The study was limited to 100 individuals. Of these, 55 were male and 45 female. Fifty-nine of the patients were under nine years of age; 41 were nine years old and over. Eighteen per cent of the patients had no upper respiratory symptoms, suffering from other major allergies previously mentioned.

Concurrently with diagnostic procedures, and before therapy was instituted, each patient participated in a series of three audiometric tests given at intervals ranging from one week to one month apart. There was only chance correlation between test dates and individual periods of heightened allergic distress. Prior to testing, it was ascertained that patients' ear canals were free of cerumen and that no infection was present. Patients were enjoined from using any antihistamine or nasal decongestant for a minimum period of 36 hours before each test. The only exception to this injunction was made when antihistamines were specifically prescribed to assist with a differential diagnosis. In these instances, and when periods of conditioning were necessary with the youngest patients, more than three hearing tests were given. It is with the results of these audiometric series, and their interpretation in the light of the previous considerations, that this paper is principally concerned.

An audiogram is a standardized form, upon which are recorded findings relative to the way in which a specific individual hears a standardized set of sounds. These tones are identified by their vibratory frequency in cycle-per-second notations, and are presented in octave or semi-octave steps; changes of intensity are measured in decibels, and are customarily made in five-decibel steps. An audiometer produces the test tones, which may be presented to either ear by way of air or bone conduction, and methods both of presentation and of annotation on the audiogram have been standardized (Figure 2).

The report form is designed to relate findings to an established norm for hearing acuity, here indicated by the line marked zero. As with other clinical measurements, however, such as those for body temperature, blood pressure, pulse and respirations, this norm is actually considered as a reference point for normal function. Judgment and experience accept individual variations up to plus or minus 10 decibels around this point, as falling within normal limits. Additionally, in recognition

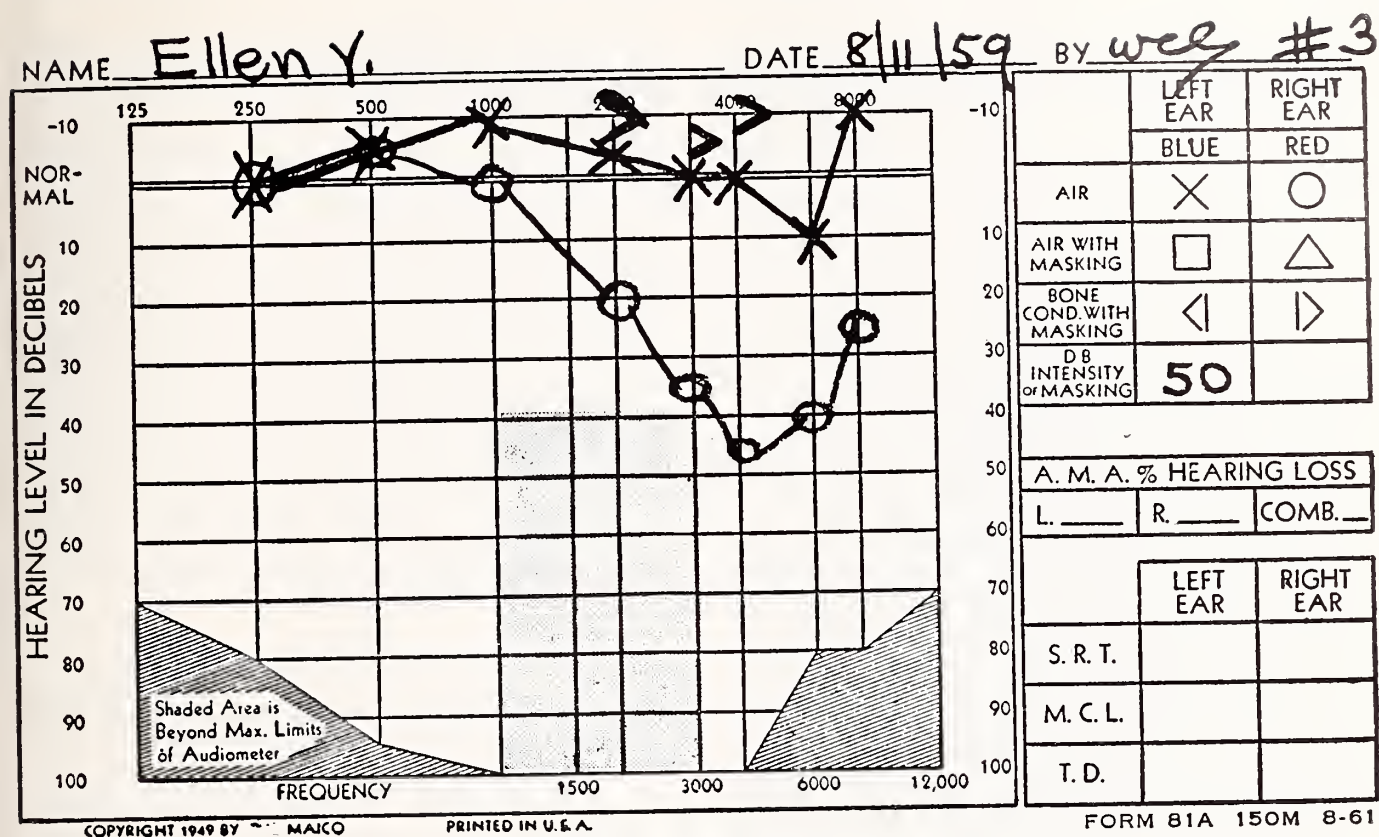


Figure 2. Audiogram record.

of the masking effects of environmental noise upon the hearing of an individual being tested, most hearing surveys include a consideration of the noise conditions of the specific testing site, and the limits of normalcy for that survey are extended accordingly.

The present study is concerned with findings based on a total of 396 audiograms which trace the hearing patterns of 100 allergic patients. The tests were conducted in an isolated, sound-treated cubicle. In those few instances where this was not possible, limits of normalcy for frequencies customarily affected by variations in ambient noise, were adjusted. All the tests made on any one patient were conducted in identical surroundings. All tests, on all patients, were made with the same calibration-checked audiometer. All testing was performed by the same individual. Hearing loss, as considered from this point on, will indicate minimum findings of a drop of acuity of at least 15 decibels in at least two test frequencies in one ear. In actuality, only two of the loss cases reported in this study demonstrated this minimum finding. All other patients had more marked loss.

Bone conduction tests were performed as seemed necessary, and all cases under discussion here reflect a disorder of the individual's sound conduction system. Patients ranged from 3½ years of age upwards, and with many of the younger ones, several periods of orientation and conditioning

activities had to precede actual audiometry, so that the child would be ready to listen and to respond reliably.

As testing progressed, it became increasingly apparent that some patients maintained excellent hearing acuity while suffering a high degree of upper respiratory congestion. Severity of allergic symptoms, which were frequently accompanied by a disturbance of acuity in the younger child, were seldom so reflected in the hearing of the older or physically more mature patient. Recalling the findings of Armstrong and Davison relative to age factors in the incidence of secretory otitis media, and aware of the Rapaport, Szanton, Appel¹³ survey which demonstrated the spurt in onset of incidence of allergic syndromes between ages four and nine, it was decided to study the results of the present survey on an age group basis, with the break at nine years of age.

RESULTS

Table 1 presents the findings concerning hearing acuity in 100 allergic patients, 59 of whom were under nine years of age. In the total case load, 42 patients suffered some disturbance of hearing sensitivity. Of these, 33 were under nine years of age. Considered on a percentage basis, while 42 per cent of *all* patients showed a loss, in fact, 56 per cent of the patients *under nine years* had a loss, as compared with 22 per cent of those who were nine years old or older.

TABLE 1
HEARING ACUITY OF 100 ALLERGIC PATIENTS, BY AGE

Age Group	Per Cent		
	Normal	Loss	Showing Loss
9 and over (41)	32	9	22%
Under 9 yrs. (59)	26	33	56%
% distribution (100%)	(58%)	(42%)	

It had initially been determined to include in the study the first 100 allergic patients who were without infectious complications, who were old enough to give valid responses to standard pure-tone audiometry, and who would stay on until all diagnostic procedures and hearing tests had been completed. There was no screening according to the nature of the allergic syndrome. It therefore developed in the normal course of events, as illustrated in Table 2, that although 82 patients had either perennial or seasonal allergic rhinitis included in the diagnosis, 18 patients lacked either of these syndromes, presenting instead major symptoms of asthma, eczema or urticaria either alone or in combinations. Nevertheless, five of these 18 showed a hearing disturbance. Recalling the 42 per cent of undifferentiated allergic patients with a hearing loss, we find a 45 per cent loss incidence among patients with allergic rhinitis and a 28 per cent loss incidence among patients lacking this diagnosis (Table 2 A). Although the difference between these two groups is large, there is a higher incidence rate than one might expect amongst patients who have no allergic rhinitis. This finding calls for further investigation.

An evaluation of the 82 patients who had either seasonal or perennial allergic rhinitis revealed a finding of major significance (Table 2 B). Of the

TABLE 2

Diagnosis	Per Cent		
	No. of Cases	Loss	Showing Loss
A. HEARING LOSS RATE: BY DIAGNOSIS			
No allergic rhinitis	18	5	28%
Includes all rhinitis	82	37	45%
B. LOSS RATE IN 82 ALLERGIC RHINITIS PATIENTS, BY AGE			
9 and over	35	6	17%
Under 9 years	47	31	66%

35 patients over nine years of age, six (17 per cent) showed disturbed acuity. But of the 47 who were less than nine years old, 31 (66 per cent) had hearing that was below normal (Table 2 B).

TESTS SHOULD BE RUN IN SERIES ON SUCH PATIENTS

Because series of tests had been performed on the same subjects, it was possible to compare findings not only from patient to patient, but within each patient's series, from test to test. The Wishik

report, similarly based on a comparison of multiple tests, had stated: "Most of these children (who ever failed a hearing test) did not have continuous hearing loss. . . . They failed . . . 49.3 per cent of the . . . tests they took. . . . Only 29 per cent of the (test) failing pupils . . . fell into the definition of continuous hearing defect." The present investigation has found that hearing loss was demonstrable in *all* tests in only 13 of the 42 patients showing a loss (Table 3). Twenty-nine patients, or better than two-thirds of the loss cases, showed an intermittent loss of hearing which might or might not have been discovered on any single hearing test. Furthermore, the largest incidence of this intermittent type of hearing loss occurs in the age group that has least subjective ability to notice changes in personal fitness. As in the survey by Wishik, Kramm and Koch, approximately four-fifths of the cases of intermittent loss occur in children under nine years of age.

TABLE 3
ANALYSIS: 42 CASES OF HEARING IMPAIRMENT

Type of Loss	Under 9 yrs. old		9 yrs. and older		Totals	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Intermittent Loss	24	56%	5	12%	29	68%
Persistent Loss ..	9	23%	4	9%	13	32%
Totals	33	79%	9	21%	42	100%

In other words, less than one-third of the patients suffering disturbances of hearing, those with persistent loss, would surely be found by usual hearing survey methods. Over two-thirds might go undiscovered. This is true because the usual procedure in school audiometric surveys is a single screening examination of all members of the test group, on a pass-fail basis. No further testing is done on those who rate "Pass." Individuals who fail the initial screening receive a detailed retest. Only those who fail both tests are referred for medical attention. If hearing acuity is normal on the second test, it is assumed that the screening test result was in error, or of merely transitory significance because of a "cold." Report forms upon which school systems base their understanding of pupil behavior routinely recognize only two possibilities: "Hearing Loss" and "No Hearing Loss." They reflect a continuing all-or-nothing attitude toward conflicting test results: "If a loss comes and goes, it does not exist." In view of the quantity of testimony previously adduced here, these authors hold that any loss, reliably measured, which comes and goes most certainly must exist at the time it is noted, and not exist when it is not noted. If its existence conjoins the foreseeable, periodic exacerbations and remissions of a chronic disease, then the potential effects of its existence must be seriously considered.

For practical purposes, audiograms are interpreted in terms of their relation to the way in which a person is able to hear speech. Words are composed of sequences of sounds which, within a single word, differ widely from each other both in intensity and in range of vibratory frequency. A hearing disturbance rarely affects reception of all of these sounds equally. Some elements in a word may be heard perfectly, while the reception of others may be distorted or completely lacking. Similarly, within a phrase or a sentence, the accented syllables are those produced with relatively great sound energy. The "little" words which lace the sentence together meaningfully and those word endings which may indicate modifications of tense, number or degree are usually produced with a minimum of intensity, and may not be heard at all when hearing acuity is diminished.

THE SPECIAL IMPORTANCE OF HEARING ACUITY TO YOUNGSTERS

Up to this point, we have been discussing hearing disturbances and allergies, anatomy and the acoustic properties of speech. The time has come to talk about children. Learning is a child's total waking occupation and, although recognition and identification of his world will largely come to him through his eyes, understanding of it will for many years come to him only via his ears. An adult can "eavesdrop" visually—being able to read immediately makes available to him not only the accumulated recorded experience of mankind, but also the numberless trivial fragments of information which help him to maintain a functioning interactivity with the world around him. Until a child is skilled enough to use reading ability meaningfully, he depends totally upon spoken language for all information and communication. And before he can use spoken language, he must hear it. For an adult, whose vocabulary is well established and who has a normal reservoir of language experience, the partial, scattered, fluctuating obliterations of speech sounds which mark hearing disturbances may be annoying, but they are seldom incapacitating. He is able to make up for them by an understanding of the context of the situation, and a memory of and familiarity with customary language usage. The young child has no such reservoir to draw upon. Daily, he is subject to a bombardment of new experiences and unfamiliar words. The degree of hearing loss which may be of little practical significance to an adult can, therefore, become a substantial handicap to a child when it blocks the only channel through which so large an amount of learning must make its way.

In addition to this educational retardation, the quality of speech development and production may be affected. West¹⁴ points out that "the effect of hard-of-hearing conditions upon speech depends, among other things, upon the age of the patient at the onset of the aural impairment." In their study "Effects of Limited Hearing on Development

of Speech in Children Under Three Years of Age," Huizing and Pollack¹⁵ state: "The development of speech implies the learning by imitation of the basic phonemes and usually occurs between the ages of one and three. . . . Through constant visual and auditory stimulation, listening habits are established for all types of sound. These listening habits do not develop normally in children with limited hearing."

THERE ARE NO "FUNCTIONAL" ETIOLOGIES

Reviewing data on 454 cases of speech retardation, in an attempt to establish etiology, Goodwin¹⁶ found less than 5 per cent to have been caused by hearing loss, as determined by a single hearing evaluation. But he also lists 53 cases with a "functional" etiology and another 97 cases in which decision as to etiology had to be deferred. In fact, then, more than 33 per cent of these cases of speech retardation remained inexplicable in terms of mental retardation, brain damage or demonstrated hearing loss. A similar situation exists in every attempt to assess etiologic factors for the defective speech production of children. The word "functional" has gained some acceptance as a description of etiology. It is seldom recalled that in fact this term refers correctly only to the absence of structural defect, is a negative finding, and does not describe the cause of any phenomenon.

Let us consider the observations of West and Huizing, together with the present findings that 56 per cent of allergic patients under nine years of age suffer some impairment in hearing, and that two-thirds of these losses may escape detection. To these points, we add the findings of the Rapaport, Szanton and Appel investigation which established that 41 per cent of major allergic syndromes in a group of 5,152 individuals took onset before 4 years of age. To be considered also is the fact that as the eustachian tubes develop, a chronic allergic illness which had caused vacuum or secretory otitis and hearing loss in the young child may continue to exist in the older child with no attendant impairment of hearing. The continuing presence of poor speech patterns learned and established in use at an age when listening habits were not developing normally, may remain as the only sign that "Kilroy was here." The authors believe that a substantial reduction could be achieved in the percentage of speech and language deviations now classified as "functional," through the use of medical investigation for the presence of allergic disease. Moreover, they recommend that school hearing tests be made and considered in a series for every child who displays frequent irritations of the respiratory tract.

The Reading report,¹ which also investigated impact of hearing loss upon academic progress, shows that children "who ever had a hearing impairment during their school lives were twice as likely to repeat a grade as were other children." And "early in their school careers, the children

who probably had had a hearing defect prior to admission to school were grossly retarded academically." It was found that "moderate unilateral impairment of hearing as well as severe or bilateral loss of hearing seemed to constitute an educational handicap, especially during the early years of learning language, reading and spelling, when missing parts of the sounds might almost completely prevent a child from grasping the meaning of what he hears."

ALLERGIC PARACUSIS OF CHILDHOOD

For the pediatrician and for the allergist, these considerations must be related to the findings in this paper. A syndrome exists which will be termed allergic paracusis of childhood. It is most prevalent in the early years of life, affecting the hearing of 66 per cent of the children who present symptoms of allergic rhinitis and are under nine years of age. It is associated with vacuum otitis, is unaccompanied by pain, and is most frequently characterized by intermittency of hearing loss. Furthermore, even in those cases where loss is persistent, it is not static in degree, but manifests fluctuations in intensity, and variations in frequencies affected. Because of its variability and the youth of those in whom it most often occurs, its presence is rarely suspected, and behavioral disturbances attributable to it are frequently charged to "immaturity," "inattentiveness," "dullness" and "emotional insecurity." Recognition of allergic paracusis of childhood as a clinical entity will produce new answers to old questions in the fields of pediatrics, allergy and otology, as well as in the associated disciplines of audiology, speech pathology and general education.

ADDENDUM

The study cited above was subsequently expanded to include 120 patients, receiving a total of 456 hearing tests. In every grouping, percentage results varied by no more than plus or minus 1 per cent. Results were published in the October 1, 1962, issue of the *NEW YORK STATE JOURNAL OF MEDICINE*.

The follow-up on David T. was also reported at that time as follows: Hyposensitization therapy on the patient was begun in October, 1960, and concurrently he received antihistamines for symptomatic relief. A correlation with the patient's school progress was made possible by the cooperation of his principal and school nurse. Prior to therapy and despite objective evidence of at least normal intelligence, the patient's achievements all indicated that he needed four years of schooling to make two and one-half years of scholastic progress. After therapy was initiated and remedial-reading help given him during the summer, the patient made a year's progress during a year of schooling, with one notable exception. In language usage, which depends on alertness to the total

speech environment rather than on cumulative formal schooling, he advanced two years to a performance at his own grade level.

When hyposensitization therapy succeeded in making the patient symptom-free, antihistamines were discontinued. Audiometric examinations in March and November, 1961, revealed a normal hearing acuity. Although it cannot be proved that this was due to therapy rather than simply to physical maturation, the chronic upper-respiratory congestion present at these seasons in previous years was no longer in evidence.

Since the original study was presented, other significant information has been published which has a direct bearing upon the Szanton findings. Since 1956 the American Academy of Ophthalmology and Otolaryngology has been concerned with a long-term study of hearing problems in children. In 1962, Eagles and Wishik reported preliminary findings indicating that the normal hearing levels are significantly more acute in children than in adults. It follows that a child can have a considerable hearing loss without its being detected by the 15 or 20 decibel screening levels currently employed.

The National Conference on Identification Audiometry defined the medical, social and educational purpose of audiometry thus: to locate children who have even minimal hearing problems so that they can be referred for medical treatment of any active ear conditions discovered to be present, and so that remedial educational procedures can be instituted at the earliest possible date. Programs should be designed to identify not only children with a chronic disability, but also children who have difficulty during only certain times of the year or under certain conditions.

Our findings demonstrate the high proportion of allergic youngsters who may fall within this group. Their physicians should be constantly aware of this. That such is not necessarily the case is suggested by a study of referral diagnoses which have been made at the New York Hospital of a group of preschool children on whom the hospital made the finding of hearing loss. At least 60 per cent had been referred as mentally defective, aphasic or emotionally disturbed. Fewer than 40 per cent had been referred with even the suggestion of the presence of a hearing loss.

General physicians and pediatricians must be more concerned with the etiologic evaluation of the child who "always has a cold." Consultation with an allergist is frequently indicated.

For children with chronic upper-respiratory symptoms, who may also demonstrate disorders of speech and language development, or scholastic under-achievement, or behavior deviations such as inattentiveness, dullness and day-dreaming, the physician should require hearing tests, made and considered in series, as part of a diagnostic work-up. The audiologist will realize that any child who

has chronic symptoms of upper-respiratory congestion should have hearing tests made and considered in series.

Any hearing loss demonstrable in the presence of chronic or recurrent coryza or infection of the upper-respiratory tract should always receive the benefit of allergic as well as otologic consultation.

The allergic history should include questions relative to attentiveness and development and intelligibility of speech. Otoscopy should be routinely used to recognize signs of tympanic abnormalities. If such services are available, a series of audiometric tests should be required as a part of the routine case work-up.

In treatment, the value of antihistamines for upper-respiratory allergy, until hyposensitization therapy reaches levels effective for control of symptoms, is reaffirmed.

Otologic consultation is imperative in every instance where findings suggest hearing disturbance. Myringotomy or other equivalent procedures may be desirable for immediate relief of paracusis, but should not be considered a total therapy. It is of basic importance to determine the cause of upper-respiratory distress, so that it may be treated. Recurrence of serous otitis media can frequently be prevented in this way.

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The Committee on the Conservation of Hearing for the State of Iowa, which is presenting a series of articles in the *JOURNAL*, consults with and advises all agencies interested in the problems of hearing impairment. Its services are available to industry, agriculture, education and to the broad spectrum of public health and welfare services within the state.

The Committee has been officially sponsored by the Iowa State Department of Health since 1957. It was first formed in 1949, under the leadership of Dr. D. M. Lierle, head of the Department of Otolaryngology and Maxillofacial Surgery at S.U.I. From the first, the Committee has been interdisciplinary in composition and purpose.

The Committee presently consists of: C. M. Kos, M.D. (chairman), otologist in private practice, Iowa City; Joseph Wolvek (executive secretary), consultant, Hearing Conservation Services, State Department of Public Instruction, Des Moines; M. G. Barillas, assistant director for Special Services Division of Vocational Rehabilitation, Des Moines, Iowa; L. E. Berg, superintendent, Iowa School for the Deaf, Council Bluffs; Dale S. Bingham, consultant, Speech Therapy Services, State Department of Public Instruction, Des Moines; Paul Chestnut, M.D., private practitioner and member of AAGP, Winterset; James F. Curtis, Ph.D., head, Department of Speech Pathology and Audiology, S.U.I., Iowa City; Madeline M. Donnelly, M.D., director, Division of Maternal and Child Health, State Department of Health, Des Moines; Joseph Giangreco, assistant superintendent, Iowa School for the Deaf, Council Bluffs; Malcolm Hast, Ph.D., Department of Speech Pathology and Audiology, S.U.I., Iowa City; Byron Merkel, M.D., otolaryngologist in private practice and member of Academy of Otolaryngology and Ophthalmology, Des Moines; William Prather, Ph.D., Department of Speech Pathology and Audiology, S.U.I., Iowa City; Mrs. Jeanne Smith, Department of Otolaryngology and Maxillofacial Surgery, S.U.I., Iowa City; Edmund Zimmerer, M.D., commissioner, State Department of Health, Des Moines.

Death Certificates Must Now Be Typewritten

All physicians should be careful to note and to comply with the new requirement, enacted by the 1963 General Assembly as an amendment to the Medical Practice act, that all information on death certificates must be typewritten. The certificates may *not* be written in longhand, and printing is *not* an acceptable substitute for type-writing.

The physician's name on each death certificate, henceforth, must appear *both* as a signature (handwritten by the doctor himself) and in typewriting.



Iowa Chapter of the American Academy of General Practice

Postgraduate Education

V. L. SCHLASER, M.D.

The practice of medicine is not just a scientific art—it is a *progressive* scientific art. Each practicing physician knows how absurd it would be for him to practice his profession and treat his patients with no more knowledge than he had at the time of his graduation from medical school. Nor would he be content to have only the added knowledge that he gained from his internship or residency training.

A physician's education is never completed. In general, every physician continually seeks to improve his knowledge in the practice of his profession at every possible opportunity. Although all physicians realize the importance of postgraduate education and whole-heartedly endorse postgraduate programs and seminars, there is sometimes the human tendency to postpone the utilization of the available courses. Their intentions are forthright, but sometimes they think "I'll take a refresher course next year, but I can't do it this year," and then a year passes and perhaps five years elapse. Still their intentions are good.

Some physicians excuse themselves for not attending postgraduate courses by saying that they are content to read the current medical literature. Reading the current medical literature should be a part of every physician's postgraduate education—but only a part of it. The intent to read a given article is sincere, but it is easy to put an article aside because one does not have time, at present, to read it. Their intentions are to read the article when time is available, but in many instances, time never becomes available.

When I read an article published in the medical literature, I always have the feeling that the author is biased on his subject and feel therefore that one should read several articles about the subject by different authors to obtain an over-all understanding of it, and this takes considerable valuable time and study. When you are reading an article, can you stop midway and ask questions of the author? By the same token, a speaker presenting a paper is also biased in his presentation, but usually an opportunity is provided for listeners to question the speaker. An ideal way of getting an understanding of advanced medical information is by hearing a round-table discussion by a small group of learned individuals, on a particular

subject, prompted by questions from the listeners.

Regardless of the methods you utilize to improve your medical knowledge, you owe it to your patients to do so. They expect you to improve your medical knowledge continually so as to be better prepared to care for them in their illnesses. They also read the brief unscientific writings that appear in lay publications, and expect you, as their physician, to have a thorough understanding of the recent advances and experimental work in medicine that have been described there.

The American Academy of General Practice, when it was established, formulated a backbone for the organization—a postgraduate study requirement for continued membership. That requirement makes it mandatory for its members to complete a required amount of postgraduate study during each three-year period of membership. Most all members of each of the medical and surgical specialty groups attend conferences and seminars, not because they are required to do so but because they want to be better physicians and because they want to improve their medical knowledge for the benefit of their patients.

My objective in this brief article is to impress upon every physician that it is necessary for each of us to set up a schedule or program of postgraduate education and study, and then follow through with this schedule and not allow the human habit of procrastination to deter him from his schedule. I know the opportunities for some physicians to get away from their busy practices vary markedly. Naturally it is more difficult for someone in solo practice to get away, but unless you happen to be a "jealous practitioner" you can usually make arrangements for a neighboring physician to cover for you while you are gone. He would like to get away too, sometime.

Therefore, make yourself a better physician by establishing and following through with a definite schedule of reading, and of attending seminars and discussions. Your patients believe in you, their personal physician, and believe you to be the best!

Remember the dates of the Annual Scientific meeting of the Iowa Chapter—September 16, 17, 1963, Hotel Savery, Des Moines, Iowa.

THE DOCTOR'S BUSINESS

Investment Fund Performance

HOWARD D. BAKER
Waterloo



For investors who have difficulty distinguishing between dividends and capital gains from investment funds, 1962 was a painfully instructive year.

Despite sharp declines in security prices, seven of the 10 largest open-end funds reported higher dividends for 1962. Yet the same price decline made it impossible for any of the 10 to realize higher capital gains (profit on stocks sold from their portfolios). Consequently, most of these 10 funds made from 20 to 70 per cent lower capital gains distributions in 1962 than in 1961.

The 1962 market decline had an interesting effect on the over-all performances of investment funds. Almost all performances were disappointing, though the funds with the most conservative managements and past performances generally fared better than did the more aggressive funds.

When one reviews fund performances for periods ending in 1962, it is of paramount importance for him to consider more than just the year 1962. The conservatism mentioned above put some usually humdrum funds in top-performance positions for the year. However, when one looks at their longer-term performance (five and 10 years), they fall into their proper relative positions.

The following is a tabulation of the 10 best performers for the 10-year period that ended December 31, 1962. In each instance, performance is stated as the percentage of change in the fund's asset value from the beginning to the end of the period indicated, and measures market or price action as well as dividend and capital gains payments.

	10-yr. Rank	Year 1962 %	Year 1961 %	5 yrs. '58-'63 %	10 yrs. '53-'63 %
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Dreyfus Fund	1	-14	+26	+121	+359
T. Rowe Price Growth Stock	2	-13	+25	+ 94	+299
DeVegh Mutual Fund	3	-12	+19	+ 61	+277

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

Franklin Custodian—Utilities	4	- 7	+26	+131	+273
National Investors Corp. . .	5	-15	+21	+ 98	+268
Keystone (S-4)	6	-23	+29	+123	+260
Television-Electronics	7	-17	+22	+ 93	+252
Massachusetts Inv. Growth					
Stock	8	-17	+25	+ 93	+251
Century Shares Trust	9	- 7	+57	+135	+249
Washington Mutual Investors	10	- 6	+26	+ 94	+235

It should be noted that there are some "new-comers" in the top 10, as is the case every year. Whether these newcomers can sustain their distinction remains to be seen. The fact that many funds have come and gone from this list over the past five years indicates the importance of constant study of performance year after year.

To demonstrate this point, we went back five years to our study of the top 10 funds for 1957, and found the following—in order of their performances for the 10 years 1948-1958:

- | | |
|------------------------------------|-----------------------------------|
| 1. Keystone S-3 | 6. Chemical Fund |
| 2. Incorporated Investors | 7. National Investors Corporation |
| 3. Massachusetts Inv. Growth Stock | 8. Fundamental Investors |
| 4. Massachusetts Inv. Trust | 9. Eaton & Howard Stock Fund |
| 5. Television-Electronics | 10. Fidelity Fund |

It is quite surprising to learn that only three of the top 10 in 1958 appear in the 1962 list: Massachusetts Investors Growth Stock Fund, Television-Electronics Fund and National Investors Corporation. Going back to 1955, when we first started determining a top 10, we found that Television-Electronics was absent from the list.

In summary, a one- or two-year evaluation of performance is completely useless. Leadership in performance over a 10-year period is better, but is still inconclusive. A valid appraisal can be made only by continuous study of long-term performance—as evidenced by the records of Massachusetts Investors Growth Stock Fund and National Investors Corporation. Neither is in absolutely the top position currently, but they are the only two funds that have stayed consistently in the top 10 for years, whereas others have come and gone.

The Physician Is Influential in Medical Recruiting

A recently completed survey of high school, pre-medical, medical and medical drop-out students, and of internes and residents has indicated that the junior and senior years in high school are critical times for youngsters, as regards their choosing careers, and that practicing physicians can do more than anyone else in persuading them to choose medicine.

The survey, conducted by the Student American Medical Association under a grant from Merek, Sharp & Dohme, Inc., provides an interesting profile of the "typical" young physician:

- He chose medicine as a career because of the humanitarian aspects of the work.

- He was influenced by others in making his choice—primarily by his family, but with physicians, particularly his family doctor, almost as important.

- Few people have counseled him against a medical career.

- It's a 50:50 chance that he considered dropping medicine during premedical training.

- He believes the burden for recruiting new people for medicine rests primarily with the individual physician.

- He feels that the major deterrents to the study of medicine are the time, effort and amount of study necessary, and that financial burdens are no more than a secondary consideration.

- He would encourage others to choose medicine as a career, and would make the same choice again himself.

AOA INITIATION AT S.U.I.



Chosen for high scholastic achievement, sixteen students were initiated in May into the S.U.I. chapter of Alpha Omega Alpha (AOA), national honorary medical society. Loren Hickerson, executive director of the S.U.I. Alumni Association, spoke on "The Compleat Alumnus" at a banquet honoring the new members of AOA. Also attending the banquet were three medical seniors who were initiated into AOA last year. They are Stephen J. Curtis, William J. Dougherty, and Donald G. Butterfield. Curtis served as president of AOA for the past year and Dougherty has been vice-president. Pictured following the initiation ceremony are:

Front row: Donald G. Butterfield, Central City; Dr. Willis M. Fowler, professor of internal medicine, chapter counselor; Stephen J. Curtis, Cherokee, president; Dr. C. E. Radcliffe, professor of dermatology and secretary-treasurer of

the chapter; and William J. Dougherty, Marion, vice-president.

Second row: John K. Kammermeyer, Iowa City; Janifer Judisch, Ames; Lyn Makeever, Davenport; Charles B. Wilmarth, Harris; Richard R. Van Epps, Phoenix, Arizona; Joe F. Fellows, Ames; Robert C. Cowger, Iowa City.

Third row: Robert E. Van Scoy, Osceola; E. Byron Marsolais, Iowa City; Charles D. Phelps, Waterloo; John A. Bryant, Waterloo; Barry E. Knapp, Westfield; Jerry N. Ringer, Mount Vernon; David Dahl, Forest City, and Walter E. Gower, Fort Dodge.

Not pictured is Deane L. Noblett, Cresco. All of the students graduated at the June 7 Commencement except Mr. Kammermeyer, Mr. Wilmarth and Mr. Cowger, who are now seniors.

Iowa Association of Medical Assistants

A.M.A. Needs You

In recent weeks many of us have been fortunate in hearing statements made by people whose opinions we respect opposing the amended King-Anderson Bill. When the original bill was killed in Congress last year, we thought our job of helping to defeat the bill was completed—that we had heard the last of that particular legislative proposal. But we reckoned without the determination of the politicians intent on pushing through what they call “The Hospital Insurance Act of 1963.” This is an amended King-Anderson Bill to provide hospitalization and related services to the aged under the Social Security program, and we are right back where we started.

In 1960 the Kerr-Mills Law was passed by the U. S. Congress, enabling individual states to guarantee help to every aged American *needing* health care. This Law benefits elderly people who need it—not only Old Age Assistance recipients but also people who are self-supporting but unable to meet the cost of a prolonged or catastrophic illness. It helps only those who need help and avoids a waste of tax funds, since it is to be administered through existing local agencies where individual needs are known. Funds have now been made available by the Iowa General Assembly to implement this law.

Captain Eddie Rickenbacker says that one of the greatest evils we face today is our own apathy. We cannot be apathetic about the future. Our forefathers prepared the future for us, and we must do the same for coming generations; we cannot do it with deficit spending. If we continue to increase the national debt and devalue the dollar, socialism is inevitable.

U. S. Senator Jack Miller, speaking in Iowa City recently, said that we must consider this problem in terms of both today *and* tomorrow. He is opposed to government financing of medical care as proposed in the King-Anderson Bill because it provides for those who do not need it, because it would be implemented under the Social Security Act, and because the Social Security Act is not insurance. It is a tax and has been so judged by the U. S. Supreme Court.

The Health Insurance Institute reports that 75 per cent of all Americans had some form of private health insurance in 1961, and although the percentage of elderly people covered is not that great, in the 10 years prior to 1961 the ratio rose from 16 to 53 per cent for persons over 65. The King-Anderson Bill would not close this gap, nor would

it cover some three million people ineligible for assistance under the Social Security program. And, if the Social Security tax continues to soar—and it will—many of us will be less and less able to take care of our own medical needs.

At the IAMA annual meeting in Burlington in May, Mr. Aubrey D. Gates, director of the Division of Field Services for the American Medical Association, said that the medical assistant is the first line of defense in the field of public relations in medicine. He thanked us for the work we had done, and said that the resolution presented by the Iowa Medical Assistants to the AAMA House of Delegates two years ago supporting the stand taken by the medical profession against the King-Anderson Bill was the first such move made by any Medical Assistants Association.

Mr. Gates also said that public relations is a by-product, not an activity. Each of us is responsible to some extent for what the individual patient thinks of her employer-doctor, for what most patients think of him, and for what the community thinks of him. Also the medical assistant is responsible for what the community thinks of all its other doctors, and for the feeling of the general public toward all the doctors in the country. Mr. Gates is one of six registered AMA lobbyists. We were impressed with his sincerity and by the information which he gave us.

Senator Miller said that when the facts are on the side of his client, the lawyer addresses his argument to the jury. AMA has given us the facts in two new pamphlets from OPERATION HOMETOWN: “Vital Questions and Answers on Health Care for the Aged” and “To All My Patients From Your Doctor.” IAMA was the first group to receive these. We are the attorney, our patients are the client, and our friends and neighbors are the jury.

The constitution of the American Association of Medical Assistants, of which IAMA is a constituent association, lists the following as its first two objectives: (1) to inspire its members to render honest, loyal and more efficient service to the medical profession and to the public which it serves, and (2) to strive at all times to cooperate with the medical profession in improving public relations.

It must be clear to each of us that we have more than a small share in this undertaking. We know the facts; they have not changed since last year. It is urgent that we take action now!

Whom can we ask for assistance? We should write to the AMA, 535 North Dearborn St., Chicago 10, Ill., for pamphlets from OPERATION HOMETOWN. These will answer any questions we may

have and enable us to discuss this issue with intelligence and sincerity. *What* can we do individually? We can talk with patients and friends, and enlist their help in defeating this amended King-Anderson Bill. *Why* should we be so concerned? Because we do not want government control of medicine? The people of the United States have the best medical care in the world, and it is *not* compulsory. *When* should we start? *Now!* Next month may be too late. *Where* can we do the most good? In addition to talking with our friends, we should write letters to our Congressman and Senators. They represent us; we should let them know that we appreciate the work they have done and ask for their cooperation in defeating the King-Anderson Bill (H.R. 3920, 88th Congress). Our letters need not be long, but each should state reasons for our views very simply and sincerely.

If you would like speakers to give your organization more information on OPERATION HOMETOWN, consult your county medical society.

THE MEDICAL PROFESSION NEEDS YOUR SUPPORT TODAY, TOMORROW AND ALL THE DAYS AFTER TOMORROW, UNTIL SPECIALIZED MEDICINE IS DEFEATED!

—HELEN G. HUGHES

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DES MOINES CHAPTER—Miss Isabelle Kirtley,
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Burlington

FT. DODGE DISTRICT—Mrs. Ruth Parrish, 1240
Walnut St., Webster City

IOWA CITY DISTRICT—Mrs. Margaret Stober,
1110 N. Dodge St., Iowa City

JASPER-POWESHIEK—Mrs. Esther Matthews,
1216 Spencer, Grinnell

LINN COUNTY—Mrs. Barbara Smith, 157 24th
St. Dr. S.E., Cedar Rapids

MASON CITY—Mrs. Wilma Mathis, 221 2nd N.E.,
Mason City

OSKALOOSA DISTRICT—Mrs. Colleen Berglund,
1326 Barclay, Oskaloosa

SCOTT COUNTY—Mrs. Alice Diehl, 2632 Iowa
St., Davenport

WAPELLO COUNTY—Miss Helen Steinkopf, 418
N. Ash, Ottumwa

WOODBURY COUNTY—Mrs. Jean George, 1216
14th St., Sioux City

Accreditation of Nursing Homes

A National Council for the Accreditation of Nursing Homes, jointly sponsored by the American Medical Association and the American Nursing Home Association, has been organized to carry out a nationwide program to promote high standards among nursing homes. Organization of the new council, including the appointment of a nine-member Board of Directors, was completed at a meeting of representatives of the AMA and the ANHA in Chicago at the end of May.

The Board of Directors is composed of five physicians and four owners and operators of nursing homes. Physician members are Dr. H. Close Hesseltine, Chicago; Dr. Pierre Salmon, San Mateo, Calif.; Dr. Wilson T. Sowder, Florida state health officer, Jacksonville, Fla.; Dr. Thomas McCreary, Rochester, Pa.; and Dr. Frederick C. Swartz, East Lansing, Mich. Nursing home representatives on the board are Alton Barlow, Canton, N. Y.; Mrs. Eleanor Baird, New Milford, Conn.; Mrs. Vesta Bowden, Denver, Colo.; and Mrs. Pauline Williams, Phoenix, Arizona.

The National Council for the Accreditation of Nursing Homes will be headquartered in Chicago, with a full-time executive director to administer the program. The executive director has not yet been selected.

Mrs. Baird was named chairman of the Board of Directors, and Dr. Hesseltine was selected as vice-chairman. Mrs. Baird pointed out that nursing homes are becoming increasingly important in health care, with the rising population of older citizens and the wider use of nursing homes for convalescence and care of the chronically ill. She said that a national accreditation program which recognizes nursing homes of high standards will serve to raise standards in all nursing homes.

The number of skilled nursing homes increased from 7,000 in 1954 to 9,700 in 1961, with a total bed capacity increase from 180,000 to 338,700.

Film on Obesity for Physicians

A new film entitled, "Obesity: Some Highlights of Management," is being made available by E. R. Squibb & Sons, Division of Olin Mathieson Chemical Corporation. The lecture-type film, delivered by Dr. Garfield G. Duncan, professor of medicine, University of Pennsylvania, points out that obesity is a leading menace to health and longevity and is one of the greatest challenges in the practice of medicine. Designed for viewing by professional medical audiences, the film highlights some methods employed by Dr. Duncan and his colleagues in the management of obesity. Dr. Duncan is also director, Medical Divisions, Pennsylvania Hospital and Benjamin Franklin Clinic.

The black and white sound film runs 20 minutes and is available at no charge from all Squibb regional offices, or by writing the New York office at 745 Fifth Avenue.

STATE DEPARTMENT OF HEALTH

Edmund G. Zimmerman
COMMISSIONER

Food Infections and Intoxications Iowa 1962

Keep Food Clean!
Keep It Hot, or Keep It Cool!

The State Department of Health learns of only a few instances in which these cardinal principles of food handling have been violated each year, in Iowa. Those that do come to its attention usually have involved large numbers of persons, or have caused severe illness in a few people. Doubtless the instances of carelessness are far more numerous than the following statistics indicate, and it is mere good luck that the mortality and morbidity rates for food infections and intoxications aren't higher.

SALMONELLOSIS

For 1962, reports of 84 cases of human salmonellosis in Iowa were received. This number includes three cases of typhoid fever. The accompanying map shows the numbers of cases by county, and Table 1 contains a list of the salmonella serotypes of the cases, by county, as reported by I. H. Borts, M.D., director of the State Hygienic Laboratory.

A summary of cases by serotype shows 52 due to typhimurium; 5 hartford; 4 newport; 3 typhi; 3 enteritidis; 2 oranienburg; 1 each of java, arizona, montevideo, saint paul, choleraesuis, hirshfeldii, panama, san diego, blockley and Group B; 2 Group C; and 3 type undetermined.

During 1962, salmonella organisms were recovered from non-human sources in 50 instances. The

DISTRIBUTION OF HUMAN SALMONELLOSIS CASES BY COUNTIES, 1962

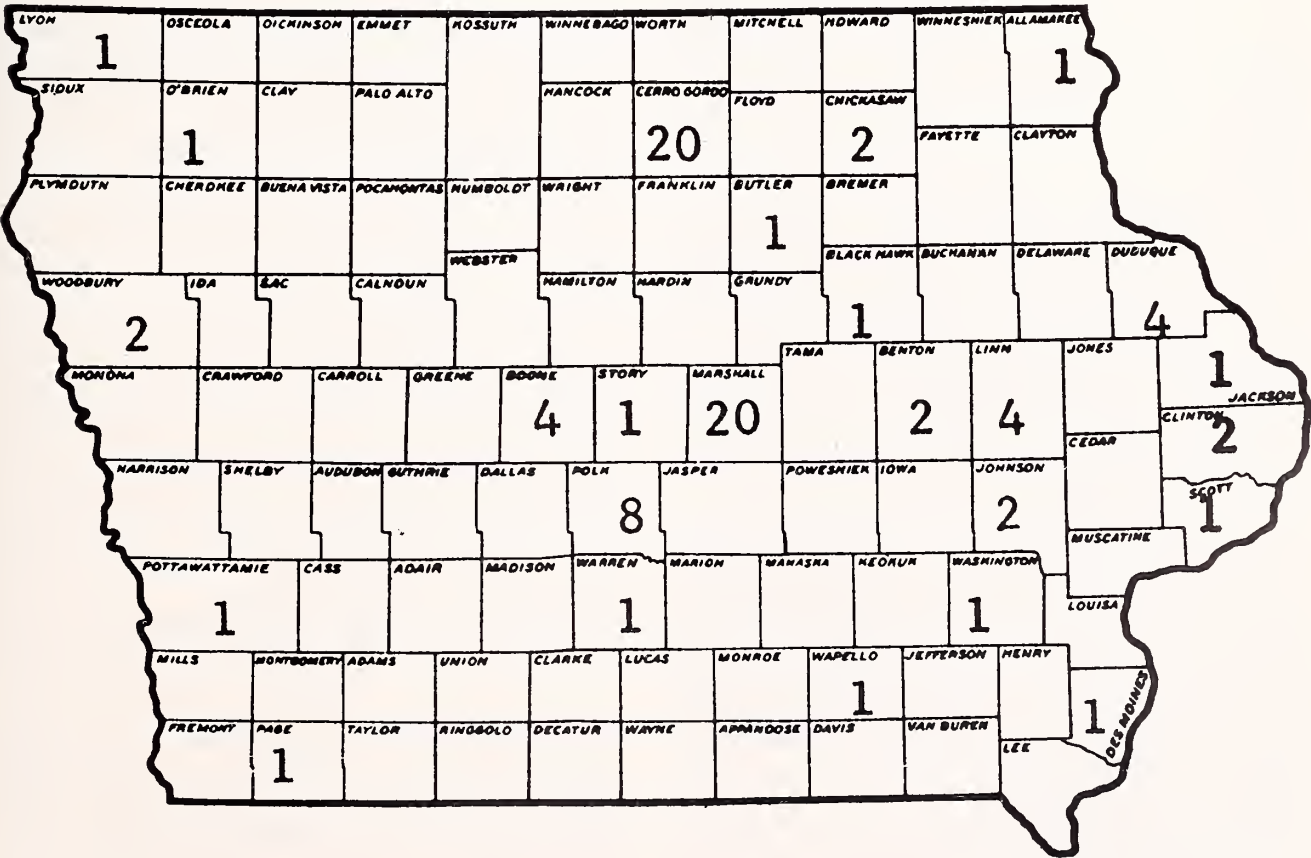


TABLE I
SALMONELLA SEROTYPES IN THE 1962 CASES IN IOWA

County	Cases	Serotype
Allamakee	1	hartford
Benton	1	newport, I oranienburg
Black Hawk	1	newport
Boone	3	typhimurium, I type undet.
Butler	1	typhi
Cerro Gordo	20	typhimurium
Chickasaw	2	hartford
Clinton	1	hirschfeldii, I Group B
Des Moines	1	typhi
Dubuque	2	typhimurium, I hartford, I enteritidis
Jackson	1	enteritidis
Johnson	1	enteritidis, I arizona
Linn	1	typhimurium, I java, I saint paul, I monteideo
Lyon	1	Group C
Marshall	20	typhimurium
O'Brien	1	newport
Page	1	typhimurium
Polk	3	typhimurium, I hartford, I newport, I blockley, I Group C, I type undet.
Pottawattamie	1	typhi
Scott	1	choleraesuis
Story	1	type undet.
Wapello	1	typhimurium
Warren	1	panama
Washington	1	san diego
Woodbury	1	typhimurium, I oranienburg

sources and serotypes, as reported by Paul C. Bennett, D.V.M., professor and supervisor, Iowa Veterinary Medical Diagnostic Laboratory, are as follows:

Hogs: 3 choleraesuis; 4 choleraesuis, var. kunzendorf; 1 heidelberg; 1 typhimurium; 1 typhimurium, var. copenhagen; 1 derby; 1 saint paul; 1 bredeney.

Turkeys: 3 typhimurium; 3 saint paul; 1 schwarzengrund; 1 arroger; 1 bredeney; 1 chester; 1 heidelberg; 1 gallinarium.

Chickens: 6 pullorum; 2 gallinarum; 1 saint paul; 1 typhimurium, var. copenhagen.

Cattle: 5 typhimurium; 1 typhimurium, var. copenhagen; 1 enteritidis.

Sheep: 1 typhimurium; 1 derby; 1 muenchen.

Rabbits: 1 typhimurium.

Feed Samples: 1 cerro; 1 livingstone; 1 illinois monophesis; 1 newington.

According to the U. S. Public Health Service,¹ during January, 1963, a total of 1,111 salmonella cultures of 61 serotypes were isolated from human sources, and during the same month, 525 isolations of 52 serotypes were identified from non-human sources. Forty serotypes were recovered from both human and non-human sources. These findings emphasize the magnitude and complexity of the salmonellosis problem.

S. typhimurium was the serotype most frequently recovered from human sources, 355 of the

1,111 cases being of this type. There were 91 *S. heidelberg*; 72 *S. infantis*; 67 *S. newport*; 59 *S. typhi*; 32 *S. monteideo*; and 31 *S. enteritidis*. Twenty-nine per cent of the human isolations were from children under five years of age.

McCullough² has said, "The incidence of food-borne salmonellosis is not accurately known, but it is great, perhaps rivaling the common cold in frequency. Most cases do not come to medical attention. Only the more severely ill cases and outbreaks involving numbers of people are reported and appear in our vital statistics. The list of foods which have been incriminated in outbreaks of salmonella gastroenteritis includes such varied items as sliced watermelon, codfish cakes, custard, egg-nog, baked alaska, baked ham, spaghetti, chopped liver, bread pudding, milk, mutton, rice pudding, scrambled eggs, pork sausage, smoked fish, lemon pie, cream pie, cheese, chocolate eclairs, smoked sausage, mayonnaise, veal salad, pickles, cream cakes and meat pies."

Of the 525 isolates from non-human sources, *S. typhimurium* and *S. typhimurium* var. copenhagen contributed 108 (21 per cent). Other relatively common types from this source were *S. anatum* (10 per cent); *S. heidelberg* (7 per cent); and *S. bredeney* (7 per cent). Non-human sources from which these isolates were recovered included chickens, turkeys, ducks, pigeons, quail, hatchery environment, horses, cattle, hogs, hog environment, hog feed, dogs, dog feed, rabbits, guinea pigs, mink, wild cats, rats, raccoons, chinchillas, shucked oysters, fish meal and meat scraps. A survey of animal byproducts and complete rations by the U. S. Department of Agriculture's National Animal Disease Laboratory³ revealed salmonella in bone meal, fish meal, laboratory animal feeds, livers, meat scraps, meat scraps and bone meal, meat meal, poultry byproducts, poultry feeds, miscellaneous animal protein, swine supplements and tankage. Fifty-nine serotypes were found in that study, the commonest being *S. monteideo*, *S. senftenberg*, *S. typhimurium*, *S. cubana*, *S. infantis* and *S. oranienburg*.

As was suggested by the recovery of 40 serotypes from both human and non-human sources within a one-month period, almost all serotypes are pathogenic for both man and animals. Striking examples of host-adapted serotypes are *S. typhi*, paratyphi A, paratyphi B and paratyphi C, which cause typhoid fever and paratyphoid fever in man. They are not considered pathogenic for animals, even though they have been recovered from animals on rare occasions.

This group of organisms was named after Salmon, who with Smith in 1885 pioneered in isolating and describing the first member of this group of bacteria. That organism, *S. cholera suis*, they thought at that time was the cause of hog cholera. *S. enteritidis* and *S. typhimurium* were isolated shortly afterwards from two human patients suffering gastroenteritis following ingestion of infected meat.

Two outbreaks of *Salmonella typhimurium* in-

fection in Iowa during 1962, each involving about 20 persons. offered comparatively good conditions for study. The first of them followed a church social where about 25 people ate home-made ice cream, and 20 or more of them became ill. Five were hospitalized. Salmonella typhimurium was isolated from stools of three patients, and also from the ice cream. Local cream, milk and eggs were used, and the milk and cream had not been pasteurized. The uncooked egg custard was prepared in the afternoon with kitchen temperatures in the 80's, and was allowed to stand until evening, when it was taken to the church to be frozen.

The second salmonellosis outbreak (20 cases) also involved home-made ice cream. There again, it was made with raw dairy products. Also, an uncooked custard was used. Three persons were hospitalized, and one of them died. No ice cream was available for laboratory study, but it is reasonable to assume that the home-made ice cream was the source of contamination, because all those who became sick had eaten ice cream. Furthermore, three neighbor children who did not attend the family gathering but who were invited in to "lick the dasher" became sick. Again, the mix had been left standing at room temperature for several hours before it was frozen.

POSSIBLE CLOSTRIDIUM PERFRINGENS INTOXICATION

One hundred twenty-five of 320 girl scouts and their chaperones who had eaten a buffet supper became sick from seven to 24 hours later, the average incubation period being 12 hours. The chief complaints were severe abdominal cramps and diarrhea (2-26 stools). A few had additional complaints of nausea and vomiting. One or two had fever of 100°F. Recovery was as prompt as the onset had been acute. After four to six hours, most of the girls wanted to resume their activities.

Although Clostridium perfringens was not isolated, the clinical manifestations and the epidemiologic evidence pointed toward it as the offending agent. The food concerned was probably baked beans made from pre-cooked beans. After the beans had been mixed with the sauces and placed in baking pans, weiners were laid over the top. A short cooking period was used. Many complained that the beans were cold when they were served. The perfringens organism produces toxins rapidly in a heated food that is allowed to cool slowly. It is quickly destroyed by refrigeration temperatures, and the long period of refrigeration between the time the food was served and the time it was examined at the laboratory probably accounts for the technologists' failure to recover the organism.

TRICHINOSIS

For the first time since 1956, no cases of human trichinosis were reported in Iowa during the year 1962. Typically, trichinosis is reported in small groups of cases, and it occurs in persons who have eaten improperly cooked pork. For example, the 18 cases that were reported in 1961 were all from

a single source of infection, some home-made, uncooked, smoked pork sausage. Although the incidence of trichinosis in hogs is declining, the infection still exists.

Pork is a highly nutritious, tasty food, but it always should be cooked until well done before it is eaten.

Keep Food Clean!
Keep It Hot, or Keep It Cold!

Morbidity Report for Month of
May 1963

Diseases	1963 May	1963 Apr.	1962 May	Most Cases From These Counties
Diphtheria	0	0	0	
Scarlet fever	292	240	218	Dubuque, Hancock, Jefferson, Johnson, Polk
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	901	879	1420	Clay, Dubuque, Floyd, Polk, Scott
Whooping cough	6	4	7	Webster
Brucellosis	10	17	10	Scott
Chickenpox	374	738	193	Des Moines, Dubuque, Polk, Scott
Meningococcic meningitis	1	1	0	Dubuque
Mumps	222	323	262	Boone, Buena Vista, Polk, Scott
Poliomyelitis	0	0	0	
Infectious hepatitis	37	30	101	Osceola, Polk, Scott, Woodbury
Rabies in animals	37	38	24	Carroll, Dallas, Dubuque, Plymouth, Story, Wright
Malaria	1	0	0	Bremer (acquired outside U. S.)
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	27	23	21	For the state
Syphilis	64	55	71	For the state
Gonorrhea	89	86	87	For the state
Histoplasmosis	6	0	1	Cerro Gordo
Food intoxication	25	0	272	Lee
Meningitis (type unspecified)	2	2	0	Clay, Clinton
Diphtheria carrier	0	0	0	
Aseptic meningitis	1	1	0	Buchanan
Salmonellosis	3	5	5	Johnson, Scott, Story
Tetanus	1	0	0	Louisa
Chancroid	1	0	0	Polk
Encephalitis (type unspecified)	0	0	1	
H. influenza meningitis	0	0	0	
Amebiasis	1	0	0	Marion
Shigellosis	1	3	11	Polk
Influenza	3	126	4	Polk



Woman's Auxiliary News

Address at the State Auxiliary's Annual Meeting

CHARLES V. EDWARDS, SR., M.D.

One of the more important duties of the president-elect of the Iowa Medical Society is the chairmanship of the Woman's Auxiliary Advisory Committee—"more important" because the Auxiliary is the liaison between the Medical Society and the public, and the Society's most useful and active aid in presenting medicine's side in the running battle that is now in progress. How useful the Auxiliary can be to the Medical Society can be appreciated only by reviewing and comparing its activities during the past 30 years.

I shall not attempt to add new fields for you, the members of the Auxiliary, to conquer. Instead, I shall use these few minutes to go over with you same facts and data that may help you in your daily defense of the medical profession.

A passage from Sir William Osler's "Farewell Address to the Medical Profession of the United States" is as true today as when he presented it in 1905:

"There is a delightful Arabian proverb, two lines of which run: 'He that knows not, and knows not that he knows not, is a fool. Shun him. He that knows not, and knows that he knows not, is simple. Teach him.'

"To a large extent these two classes represent the people with whom we have to deal. Teaching the simple, and suffering the fools gladly, we must fight the willful ignorance of the one, and the helpless ignorance of the other, not with the sword of righteous indignation, but with the skillful weapon of the tongue."

On this ignorance the charlatan and the quack live, and it is by no means an easy matter to decide how best to conduct warfare against these wily foes. Education of a much more systematic and active kind is needed if we are to reach the public. One example is the meeting that Dr. C. E. Radcliffe had with the club consisting of wives of the internes and residents in Iowa City this last winter. Despite a severe snowstorm, about 150 were present for his discussion of medical socioeconomic problems. Those young ladies provided a good means of "spreading the gospel," for they live in housing areas where their neighbors are students and wives of students in law, political science, geography, history, languages and teacher train-

ing. Thus, they can reach a large cross section of the non-medical population—those who need to know the facts about state medicine. In small-college and non-college communities, of course, the cross section of various professions and occupations can be reached in a similar manner through churches, women's clubs and service organizations, and I hope that each of you will make it her personal business to provide that liaison.

LET'S TELL PEOPLE ABOUT MEDICINE'S ACCOMPLISHMENTS

Within the last century—and especially within the past 50 years—medicine as a united worldwide profession, following identical methods and pursuing the same ends—the prevention of disease through discovering causes, curing sickness and relieving suffering—has done more for the human race than had ever before been accomplished by any other group.

So rapid have been the advances in vaccination, sanitation, anesthesia, surgery, biochemistry, bacteriology and improved therapeutics that we and the public have almost lost our appreciation for the revolutionary effect that medicine has had upon civilization. With all this accomplishment, we find our profession on trial, however, and we find ourselves having to defend our calling and our professional organizations.

The March, 1963, issue of the magazine *NEW MEDICAL MATERIA* describes a new type of public relations program that can be used by doctors and by the Auxiliary in "advertising" the medical profession, and its achievements and its contributions to the public welfare. It gives a method for conveying to the public the real facts about medical care today. Amplifying the overall theme "What Today's Medical Care Gives You," it states:

1. The life expectancy for infants born today is 70 years. Back in 1930 it was only 60 years.

2. There are fewer dead babies. Fifty years ago, one out of every 10 infants died during the first year of life. Today, only one of every 40 dies during the first year.

3. These changes are due to advances in drugs, to improvements in technic, and to broadened knowledge of diseases and their treatment.

This type of "advertising" may have a greater, and perhaps even a greater cumulative, impact on the public than can be produced by our profession's foes, through the use of astronomical figures regarding increased monetary costs.

THE MEDICAL PROFESSION IS EMPHASIZING
PREVENTIVE CARE

It is a widespread misconception that with privately-financed fee-for-service medicine, not only does the patient suffer a reduction in the quality of medical care, but preventive measures are neglected. It would be extremely difficult to ascertain precisely the optimum amount of preventive and diagnostic care for the members of any given society, but here are a few facts with which to combat the misconception that I have mentioned: 1. In 1953, "health supervision" was the purpose of 16 per cent of all physician-patient visits—the highest frequency of any of the 17 categories of health care. This category included pre- and post-natal care, well-baby child care, general check-ups, immunizations, etc. 2. In 1957, among 18 categories, "health supervision" again was first, with 21 per cent of all physician-patient visits.

This substantially increased purchase of preventive and diagnostic medical care under the fee-for-service system shows that the American consumer has a high preference for preventive health care, and that he (or she) is getting it. As all segments of the population become more knowledgeable, an even greater preference for preventive medical care will become evident, and the medical profession can be relied upon to provide it.

DOCTORS ARE CONSTANTLY IMPROVING
MEDICAL SERVICES

Did you know, and do you think the public knows, that the medical profession is the only occupational group in which the members are willing to sit together and review their errors and consider methods of achieving better results? Doctors regard it as the responsibility of organized medicine to promulgate standards which will result in constant improvement of the quality of medical care.

In the past 50 years: (1) The Flexner Report, sponsored by organized medicine, led to the closing of sub-standard medical schools. (2) The medical profession has established specialty boards, certification programs and postgraduate educational activities of various sorts for the single purpose of improving medical care. (3) The Joint Commission on Accreditation of Hospitals, under the sponsorship of the medical profession, has established standards to assure patients of the best possible medical care in hospitals.

RISES IN THE COSTS OF MEDICAL CARE
HAVE BEEN EXAGGERATED

In recent years there has been considerable criticism of the rising costs of medical care, largely because of a serious misunderstanding about the changes that have taken place and about their significance. It is most difficult for the public to separate professional fees from hospital costs and insurance premiums. Thus, information in some of these areas could be extremely valuable to you.

It is certainly true that the increased expenditures for medical care are due primarily to factors other than professional fees, even though doctors' charges are a part of total costs. Medical care costs have risen less rapidly than "other services," and much less rapidly than commodities in general.

The principal inflationary push occurred *before* 1952, but the attacks on the medical profession have been occasioned by the relatively rapid rise in medical care prices that has occurred *since* 1952. Actually, the purveyors of health care are being criticized, in effect, for not raising their charges as promptly as everyone else did!

From 1940 to 1960, physicians' fees advanced less than did the Consumer Price Index, and much less than did commodity prices:

AVERAGE PRICE INCREASES OVER THE
25-YEAR PERIOD 1936-1961

Average of all price increases	
(Consumer Price Index)	115.5%
Overall medical care price increase	124.7%
Increase in physicians' fees	100.4%
Increase in drug prices	46.5%
Hospital room rate increases	405.9%

Hospital Room Costs. An important factor in the change in hospital charges has been the shift from voluntary to paid labor in hospitals, with shorter hours and more days off. Much of the work done in hospitals can be classified as domestic service, and the wages for domestic-service personnel have risen 330 per cent since 1939. Doctors think that most hospital personnel are underpaid, even now, but the fact must be faced that \$80 of every \$100 of hospital expenditures goes for wages.

The major increase in medical care costs can be traced to (1) increased demands for medical care, and (2) an increased utilization of hospital services. As for the latter of these, it should be remembered that the greater use of hospital services has helped greatly to reduce the length of the average patient's stay in the hospital.

Physicians' Fees. Doctors' incomes have increased, but the costs of practice have also risen, with the result that their net-to-gross income ratio has declined (five per cent since 1950).

The General Price Increase. The Social Security administration estimates that private expenditures for health care have increased 176 per cent since 1948 due to population growth and general price increases. About two-thirds of that rise is attributed to higher prices, and the remaining third to an increased use of health services and improvements in the levels and scope of medical services. In other words, a larger population with an increased income, having learned that today's improved health care is a sound investment both medically and economically, is buying greater quantities of this care.

At no time in our history has the average individual had so great an ability to pay for medical care. Today the average American needs work

only two hours and three minutes to pay for a visit to the doctor, whereas 30 years ago he needed to work four hours and 40 minutes for each visit. Furthermore, at no time has he been able to purchase the quality and quantity of medical care that he can now buy.

Although in some other areas it is frequently possible to buy an inferior quality of product or service at a reduced cost, there seems to be no one in the world of medical care services who has as his primary and direct interest the reduction of medical costs at the sacrifice of the quality of medical care. As a matter of fact, people would be unwilling to accept the same services that were the best available just 10 years ago, even if they were available at a lower price.

PEOPLE MUST BE TAUGHT WHAT TO EXPECT FROM HEALTH INSURANCE

We must redouble our efforts at getting people to obtain adequate voluntary health insurance for themselves and their families. What is adequate? Approximately 30 per cent of families have annual expenditures of less than \$50 for medical care; 35 per cent between \$50 and \$100; 24 per cent between \$200 and \$500; and only 11 per cent spend \$500 or more per year. But this last group bears 40 per cent of *all* the expenses of medical care.

People don't buy car insurance to pay for replacing worn-out tires, batteries or spark plugs, nor do they buy fire and windstorm insurance with the expectation that it will pay for replacing worn-out furniture. If those types of insurance were written, they could not afford the premiums. People buy deductible collision insurance for their cars, but they want health insurance coverage for each scratch, sprain or headache that they may incur, and many are disappointed when they have failed to collect a sum at least equal to their annual premium during a particular year.

It has been firmly established that the distribution of health care payments throughout society can be accomplished through voluntary health insurance, so that the individual's inability to foresee and budget for his illnesses and disabilities can be compensated for through group effort. The public must be educated to the fact that it must think of health insurance in the same way that it thinks of life, fire and automobile insurance—as something that will pay the costs incident to a serious catastrophe, rather than as something on which he actually wants and expects to make a profit.

The recently devised voluntary health insurance programs for all citizens over 65, and the Kerr-Mills legislation for the near-needy aged, plus care provided for welfare recipients, should rapidly enable us to protect more than 90 per cent of our population. If the present growth continues, this goal can easily be reached without further federal legislation.

THE KERR-MILLS PROGRAM

In 1961, the Iowa Legislature enacted the Medical Assistance to the Aged Act, without voting the necessary funds to make it effective, but this year it is providing sufficient funds to assure the establishment of a good program for M.A.A. in this state.

The Kerr-Mills program was made law for the specific purpose of giving adequate help to all elderly citizens who are not now public charges, but must have assistance if their health care needs are to be met.

Two years of the initial pilot program should give the answers to many questions that are unanswerable at present. Our major uncertainty is the number of senior citizens who need this program. It is estimated that Iowa has 300,000 individuals over 65, but the number of eligibles, within the restrictions that the Legislature has established, is nearly impossible to estimate. Also, the amount and types of services that will be required to meet the needs of those eligible must yet be determined.

To provide this information for the M.A.A. program only, the Legislature will require the employment of an independent fiscal agent to process and pay claims, rather than have this program intertwined with the other programs of the Department of Social Welfare.

The actual experience of North Dakota bears out our contention that the new group of M.A.A. recipients must be kept distinct, so that we may know the precise number of Iowa's near-needy aged, and whether the new program is satisfying their requirements. North Dakota, with 56,000 people over 65 years of age, compared with Iowa's 300,000, appropriated over \$2,000,000 for 1961-1963 as its share in the program. Federal funds brought the total sum available to \$10,000,000. The administration was left to the Department of Social Welfare, and this the people of North Dakota found was a mistake. Immediately, 600 O.A.A. recipients in nursing homes were transferred to M.A.A., and during the year they were transferred back and forth, so that now no true estimate of either need or costs can be made for M.A.A.

On the pleasanter side, however, only 1,700 applications for M.A.A. were received in North Dakota, and just 1,400 were certified. Of these, 35 per cent were true M.A.A. clients—people who would not be eligible for any other type of public assistance. The second surprise was that only \$645,000 was expended during the first 18 months of the program, a figure well under the estimate that had been made originally—this despite the padding with O.A.A. eligibles.

Because of the intermingling of programs on both county and state levels, the M.A.A. program in North Dakota, unfortunately, is becoming accepted more and more as just another welfare program by the legislature, the welfare personnel and

the public of that state. We believe that this was not the intent of Congress, and thus that it is a miscarriage of the Kerr-Mills philosophy.

CONCLUSION

By far the most dangerous foe we have to fight is *apathy*. Apathy includes indifference from any cause—not from lack of knowledge but from carelessness, from absorption in other pursuits, and from a contempt bred of self-satisfaction.

The group working for the socialization of medicine is not apathetic. Wilbur Cohen has been working for the government on this project for 20 years. He can lose each year, but we can lose but once!

Let's use our knowledge and strength to support our health care system by joining voluntarily in maintaining and elevating the quality of medical care, by telling the public of medicine's accomplishments, by correcting the public's false impressions about increases in the costs of medical care, by teaching people what they can reasonably expect from voluntary health insurance, and by voicing our objections to the introduction of a system which would threaten not only the quality of medical care we have today but also the continuance of our free-enterprise society.

Women's Role in Politics

*An Address by Ernest B. Howard at the 1963
Annual Meeting of the Woman's Auxiliary
to the Iowa Medical Society*

As national advisor to the Woman's Auxiliary to the American Medical Association, I can say, without qualification, that the greatest allies physicians have are their wives. The areas in which they have done outstanding volunteer work are numerous, and their effectiveness has been repeatedly demonstrated.

In politics too, physicians' wives have an important role. And if there are any skeptics in this audience, let me remind you of two basic political facts:

1. In 1964, women voters will outnumber men voters by more than four million. If the women in this country stood together behind one political philosophy, they could pretty well call the tune.

2. Virtually every successful candidate to elective office ascribes a major share of his success to the campaign efforts of women. There is no doubt in my mind that we shall "Win With Women."

Women are such an integral part of every political action group, that it is commonly acknowledged that you must use politically sophisticated women to win. This was a consideration in the formation of AMPAC. From the very beginning, physicians' wives have been included in the AMPAC organization with full membership priv-

ileges. They are not auxiliary to AMPAC—they are full partners with their husbands.

From its inception, the AMPAC Board has had a physician's wife as one of its members. It was recognized that the physician members of the Board needed the advice and counsel of a physician's wife. In addition, AMPAC's Committee on Special Services is composed of four physicians' wives. This advisory group has already demonstrated its effectiveness. These women have become articulate spokesmen for AMPAC, have familiarized themselves with the purposes and objectives of AMPAC, have acquainted themselves thoroughly with AMPAC materials, and have accepted assignments enthusiastically.

The fact that the majority of the state political action committees have physicians' wives on their Boards demonstrates the general recognition of the vital part they play in the state political action committee movement.

Some of you may have noticed that I have been using the term "physicians' wives" rather than Auxiliary members. I urge you to note the technical difference, even though you and I know we are talking about the same people. The point I am making, however, is not merely one of semantics. The Woman's Auxiliary at the national level and at the state level, is limited in what it can do in the political action movement. The limitation is a legal one.

The Woman's Auxiliary to the American Medical Association is a corporation and is subject to the same legal limitations of the Federal Corrupt Practices Act as is the American Medical Association. It must refrain, as an organization, from partisan activities or from candidate-supporting activities. Mrs. Gastineau in her position on the AMPAC Board does not represent the Auxiliary. She represents physicians' wives. The same is true of the women who are presently on the state PAC boards.

Neither the AMA nor the Woman's Auxiliary is prohibited by law from engaging in political education. Note that I said "political education," not "legislative education." Legislative education concerns the issues in the 88th Congress and is a high priority assignment of the Auxiliary. Political education concerns how we will elect members of the 89th Congress. There is such a fine line between political education and political action, however, that it was wisely decided that political education should be the responsibility of AMPAC and the state PAC's.

Another excellent reason for this assignment of responsibility is the fact that political education programs need direction, and this direction in each state should come from the state political action committee, which has the responsibility for political decisions. While political education is not partisan, it can and should be done to generate partisan and candidate supporting activities.

HOW STATE PAC'S SHOULD WORK WITH WOMEN

I would strongly recommend to the members of each state political action committee that they appoint at least one physician's wife to their Board of Directors. The president of the state society Auxiliary can be very helpful to them in making such an appointment. They might ask her for two or three nominations and from them the Board of Directors of the state medical society or the Board of Directors of the political action committee could make a selection.

I further recommend to you that physicians' wives be kept abreast of the activities of the state political action committee and be named members of any sub-organization or committees which it may create. If they are expected to be active during a campaign and to work within the framework of the political action committee, they must be thoroughly familiar with the workings of the committee and its objectives. The PAC's membership drive within the medical profession will be more effective if physicians' wives are included in the planning and implementation of the organization's activity. The state PAC's Board will find that physicians' wives are willing and eager workers, and that in many cases they are as politically sophisticated as their husbands. The very fact that they have fewer limitations on their time is an exceptionally good reason for using them.

The state political action committee can very effectively use women within its political education program. They can do many of the time-consuming tasks of arranging meetings, inviting participants, and actually putting on parts of the program. They work tirelessly for that which they believe.

THE PHYSICIAN'S WIFE'S INDIVIDUAL POLITICAL ROLE

A physician's wife individually can engage in politics in the very same way as can any other adult female, but it is even more important for a physician's wife to be active in politics than it is for many other women. The reason for this is, of course, that physicians' wives enjoy a position of leadership in their communities. Other members of the community look to physicians' wives for direction. A physician's wife can double, and even triple, her effectiveness in politics by stimulating other women to participate with her.

We would like an individual physician's wife to do the following things:

1. Join her state political action committee and be active in it.
2. Join AMPAC and keep up-to-date on the *current political situations* as they develop, through her subscription to *POLITICAL STETHOSCOPE*. Both of these memberships give impetus to the medical political action movement, and strengthen it both in membership dollars and in the number of members.
3. She should join the party of her choice, and

be a willing worker during a campaign and, if possible, on a regular basis.

4. She should actively support the candidates of her choice—particularly the candidate for the U. S. House of Representatives.

In her work within the party or for the candidate of her choice, she may become a member of a platform committee or a candidate-selection committee, a committee woman, or may assume some other important post within the party of her choice. All of these positions are important because they have a direct bearing on the candidates who run for elective office and the platforms on which they stand.

It is my sincere hope that when we reach election day in November, 1964, we shall have thousands of physicians' wives across the country who have been active in the political education programs of state political action committees and who have been active within their own communities for the candidate of their choice. If this happens, we can virtually assure the election of many congressmen who will vote to preserve the free enterprise system and the practice of medicine within it. We shall then have a Congress interested in the preservation of constitutional government.

THE ROLE OF AUXILIARIES IN THE PAC MOVEMENT

In my opening remarks, I described some of the limitations put on organizations by the Federal Corrupt Practices Act. I should like to discuss now what the Woman's Auxiliary, nationally and at the state level, can do to forward the AMPAC-state PAC effort. I think we should stop thinking about all the things we *can't* do and think more positively of some of the things we *can* do.

First of all, the Auxiliaries should bring the AMPAC-state PAC effort to the attention of their members by including a speaker on their programs at regular intervals. This can also be done very effectively at the county level. The Auxiliary should include articles prepared by the state political action committee in its newsletters or other publications. At their meetings, they should encourage AMPAC and state PAC membership. They should include PAC exhibits at their functions. They should urge their membership to participate actively in politics for the candidate of their choice. They should urge their membership to work actively in the party of their choice.

Many Auxiliaries to state medical associations have adopted resolutions endorsing AMPAC and its state political action committee. Such a resolution was adopted by the Woman's Auxiliary to the American Medical Association at its meeting in Chicago in June, 1962. These resolutions have a very important effect. When the membership committee of the state political action committee contacts physicians and their wives concerning memberships, the individual physician and his wife know that membership in this group is approved by the official medical family.

They have one other effect which I believe is important. Women, traditionally, set the tone of the home. If you can convince women that contributions of a political nature are important investments in our country, they will encourage donations to candidates and to political parties and they will encourage membership in both AMPAC and the state political action committee. The influence of women and their influence on the family budget must not be overlooked in this area.

The Woman's Auxiliary in each state can do one other very important job if it is asked to. It can co-sponsor and promote political education programs in cooperation with the state medical association and the state political action committee. This afternoon we shall see a preview of AMPAC's 1963 educational program called "The Barnstormer." If this program can be presented to the medical profession and their wives in each state—and ideally in each congressional district—we could be much more confident about the elections in November, 1964.

CONCLUSION

In closing, I should like to make just one point—and I direct this to all state PAC chairmen and members of the PAC boards. The physicians' wives in this country are ready to be politically active. They are ready to work under your direction. They are ready to give their all for their husbands' profession. They will do what you ask them to do and in the way that you want it done if you will do two things.

1. Ask them for their help.

2. Tell them exactly what you want done—where, when, how, and why.

I can virtually assure you success for your state political action committee and for the candidates you want elected, if you do these two things.

The officers of the Auxiliary, both at the national level and at the state level, have been *very helpful* thus far, and are all willing to do much more. These women are your allies—they are your secret weapon. We will "Win With Women."

Community Health Education Workshop

The Sixteenth Annual Community Health Education Workshop, sponsored by numerous Iowa health agencies, will be held on Monday and Tuesday, July 15 and 16, at the Memorial Union, Iowa State University, Ames. The theme of this year's workshop is "Health Problems of the School Age Child—Bridging the Gap Between Knowledge and Action." The speakers will be Evalyn S. Gendel, M.D., of the Kansas State Board of Health; J. V. Rowe, Waterloo, of the Public Relations Department of Sunray-DX Oil Company; Merle Wilson, Ph.D., director of Pupil Personnel Service for the Des Moines Public Schools; Mrs. Elinor Carris,

executive director of the Des Moines Health Center; Mrs. J. S. VanWert, chairman of the Women's Committee of the Iowa Farm Bureau; and Mrs. Frances Shambaugh, of the Home Care-Home-maker Service, Des Moines-Polk County Health Department. A 6 p.m. dinner on Monday, the 15th, and a luncheon on Tuesday, the 16th, will be part of the workshop schedule.

"Medicare" and the Independent Businessman

Opposition among the nation's independent business proprietors to the principle of "medicare" financed through Social Security is stiffening, according to the most recent poll of the membership of the National Federation of Independent Business, Inc. In balloting conducted in all 50 states in April, 1963, opposition was expressed by 83 per cent of the small businessmen; 15 per cent favored the King-Anderson Bill now before Congress; and 2 per cent held no opinion, according to C. Wilson Harder, president of the Federation.

In August, 1961, the nationwide voting on the same issue showed only 73 per cent opposed, 24 per cent in favor and 3 per cent undecided, and as recently as just a year ago 77 per cent were opposed, 21 per cent in favor, and 2 per cent undecided.

"It is significant," Mr. Harder stated, "that opposition is growing to the 'medicare' principle. The independent business proprietor's increasing opposition appears to be based on two major points. One is that he fears this may start a trend toward socialized medicine. The other is that constant increases in paycheck deductions are a substantial factor in labor trouble."

Last June, he said, the nation's independent businessmen gave as 88 per cent majority to a proposed constitutional amendment which would impose a limit on the amount that can ever be voted in Social Security taxes.

"There appears to be a growing sentiment among businessmen," he continued, "that the average worker does not consider the part of his paycheck that is deducted for taxes as being a part of his earnings. More and more, employers are reporting that when their employees discuss their rate of pay, they talk in terms of their 'take home pay.'"

He also said that correspondence from independent businessmen causes him to believe that the constantly increasing employer contributions to federal and state welfare funds, plus increasing wage demands to offset employees' loss of "take home pay" is giving impetus to the current trend to replace men with machines, further aggravating the unemployment problem. On this point, he emphasizes, no poll has been taken. His opinion is based on unsolicited expressions of opinion from the national business community.

Memorial Service

*Presented at the 1963 Annual Meeting of the
Woman's Auxiliary to the Iowa Medical Society*

MEDITATION

Then said a rich man, "Speak to us of giving,"
And he answered:
"You give but little when you give of your posses-
sions.
It is when you give of yourself
That you truly give."

* * *

Then a ploughman said, "Speak to us of work,"
and he answered, saying:
"You work that you may keep pace with the earth
and the soul of the earth.
For to be idle is to become a stranger unto the
seasons, and to step out of life's procession,
that marches in majesty and proud submission
towards the infinite."

—KAHILL GIBRAN

IN MEMORIAM

Mrs. W. F. Brinkman Pocahontas
Mrs. Loren E. Collins Sioux City
Mrs. E. M. Eneboe Hawarden
Mrs. Lottie Langdon Des Moines
Mrs. John I. Marker Davenport
Mrs. William H. Myerly Des Moines
Mrs. F. Lawrence Nelson, Jr. Ottumwa
Mrs. Austin E. Schill Des Moines
Mrs. Harold Schrier Fort Madison
Mrs. J. F. Studebaker Fort Dodge
Mrs. Thomas Updegraff Waterloo

LIGHTING OF THE CANDLES

The lighting of a candle signifies the beginning
of each new life, the fullness of life is represented
in its steady glow, and the increasing light as each
candle is lit reminds us of the light each contact
with another brings to us as our lives touch one
another.
As each candle is lit, let us remember with love
those members who, having physically left us dur-
ing the year, have left us the memory of the clear
strong light of their glowing candles, as their lives
touched ours.
God calls our loved ones, but we lose not wholly
. . . what he hath given; they live on earth, in
thought and deed, as truly as in heaven.

TOUCHING SHOULDERS

There's a comforting thought at the close of the
day,
When I'm weary and lonely and sad,
That sort of grips hold of my heart
And bids it be merry and glad.

It gets in my soul and drives out the blues,
And finally thrills through and through.
It is a sweet memory that chants the refrain:
"I'm glad I touched shoulders with you!"

Did you know you were brave, did you
know you were strong?
Did you know there was one leaning hard?
Did you know that I waited and listened
and prayed,
And was cheered by your simplest word?

Did you know that I longed for the smile
on your face,
For the sound of your voice ringing true?
Did you know I grew stronger and better
because . . .
I had merely touched shoulders with you?

I am glad that I live, that I battle and strive
For the place that I know I must fill;
I am thankful, for sorrows, I'll meet with a grin
What fortune may send, good or ill.

I may not have health, I may not be great,
But I know I shall always be true
For I have in my life, that courage you gave
When I rubbed shoulders with you.

ORGAN BENEDICTION

Now may the Lord bless us and keep us while
we are
Absent one from another.

Have you moved in the past few months?
PLEASE send any changes of address to 529-
36th Street, Des Moines 12. Communication
is a necessity: Do help us keep our mailing list
up to date. You are our best source of ac-
curate information.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. G. J. McMillan, 436 C Avenue, Fort Madison
President-Elect—Mrs. H. G. Ellis, 5504 Shriver Avenue, Des
Moines 12
Recording Secretary—Mrs. N. A. Schacht, 1025 North 23rd
Street, Fort Dodge
Corresponding Secretary—Mrs. F. L. Poepsel, Box 176, West
Point
Treasurer—Mrs. M. B. Cunningham, Norwalk
Editor of THE NEWS—Mrs. R. H. Palmer, Box 568, Postville

MINUTES OF THE 1963 SESSIONS OF THE HOUSE OF DELEGATES

Iowa Medical Society Des Moines, Iowa—April 7-10, 1963

(Alphabetical Index to the Minutes Can Be Found on Page 508)

SUNDAY SESSION, APRIL 7, 1963

The House of Delegates of the Iowa Medical Society was called to order by the speaker, Dr. L. J. Halpin, of Cedar Rapids, at 10:00 a.m. Sunday, April 7. The House of Delegates approved the taking of attendance by signed registration cards. There were 110 delegates, 8 voting alternates and 19 ex-officio members present.

County	Delegate	Alternate
Adair	A. J. Gantz	
Adams	J. C. Nolan	
Allamakee	R. H. Palmer	
Appanoose		
Audubon	J. E. Blumgren	
Benton	R. C. Miller	
Black Hawk	F. G. Loomis	
	G. D. Phelps	
	C. D. Ellyson	
	T. L. Trunnell	
	E. E. Linder	
Boone		
Bremer	R. L. Knipfer	
Buchanan	P. W. Brecher	
Buena Vista	F. A. Rolfs	
Butler	C. R. Wilson	
Calhoun	P. T. Cawley	
Carroll	J. D. Weresh	
Cass	H. E. O'Neal	
Cedar		L. J. Kirkham
Cerro Gordo	G. J. Sartor	
	J. F. Paulson	
Cherokee		
Chickasaw	D. L. Trefz	
Clarke	G. I. Armitage	
Clay	D. H. King	
Clayton		
Clinton	H. A. Amesbury	
	M. E. Barrent	
Crawford		
Dallas-Guthrie	W. A. Castles	
	R. J. Peterson	
Davis	J. R. Scheibe	
Decatur	E. E. Gamet	
Delaware	R. E. Clark	
Des Moines	F. G. Ober	
	J. L. Saar	R. J. Coble
Dickinson		
Dubuque	D. F. Ward	
	D. A. Howell	
Emmet	J. P. Clark	
Fayette	R. S. Jaggard	
Floyd	R. M. Nielsen	
Franklin		
Fremont		
Greene		
Grundy	E. A. Reedholm	
Hamilton	G. A. Paschal	
Hancock-Winnebag		
Hardin	J. J. Shurts	
Harrison	J. W. Barnes	
Henry		
Howard	P. A. Nierling	
Humboldt	I. T. Schultz	
Ida		
Iowa		
Jackson		
Jasper	J. W. Billingsley	
Jefferson		
Johnson	R. H. Flocks	C. E. Radcliffe
	J. M. Layton	

County	Delegate	Alternate
	C. E. Schrock	
	K. R. Cross	P. A. McLaughlin
	C. R. Eicher	
	A. C. Wise	
	K. J. Judiesch	
	L. D. Caraway	
	R. G. Gillett	
	M. G. Bourne	
	L. C. Pumphrey	
	J. J. Redmond	
	J. J. Keith	
	John Parke	
	R. M. Chapman	
	W. J. Moershel	
	T. C. White	
	G. D. Bullock	
	J. E. Evans	
	G. S. Atkinson	
	Peter Van Zante	
	O. D. Wolfe	
	L. O. Goodman	M. L. Scheffel
Jones		
Keokuk		
Kossuth		
Lee		
Linn		
Louisa		
Lucas		
Lyon		
Madison		
Mahaska		
Marion		
Marshall		
Mills		
Mitchell		
Monona		
Monroe		
Montgomery	Oscar Alden	
Muscatine	C. P. Phillips	
O'Brien	J. C. Peterson	
Osceola		
Page	G. H. Powers	
Palo Alto	G. H. Keeney	
Plymouth	J. P. Trotzig	
Pocahontas	J. M. Rhodes	
Polk	J. T. Bakody	
	E. T. Burke	
	D. F. Crowley, Jr.	
	C. W. Losh, Jr.	
	N. W. Irving, Jr.	
	M. T. Bates	
	A. N. Smith	
	R. B. Stickler	John Uchiyama
	J. T. McMillan	
	J. H. Kelley	
	B. M. Merkel	
	H. E. Wichern	
	C. V. Edwards, Jr.	
	F. E. Marsh, Jr.	
	F. N. Weber	S. D. Porter
Pottawattamie		
Poweshiek		
Ringgold	D. E. Mitchell	
Sac	John Hubiak	
Scott	Erling Larson	
	J. H. Sunderbruch	
	J. F. Bishop	
	W. S. Pheteplace	
	M. O. Larson	
	G. E. Montgomery	
	J. D. Conner	
	A. J. Havlik	
	D. L. York	
	R. W. Boulden	
	K. E. Lister	
	Amalgamated with Polk County	
	G. J. Nemmers	
	C. N. Hyatt	
	H. H. Kersten	
	J. F. Kelly	
	R. M. Dahlquist	
	P. M. Crneyla	
	H. E. Rudersdorf	
		W. G. McAllister
	C. P. Hawkins	
Shelby		
Sioux		
Story		
Tama		
Union-Taylor		
Van Buren		
Wapello		
Warren		
Washington		
Wayne		
Webster		
Winneshiek		
Woodbury		
Worth		
Wright		

LIAISON DELEGATES

H. W. Mathiasen

J. W. Billingsley

OFFICERS PRESENT AS EX-OFFICIO MEMBERS OF
THE HOUSE

G. H. Scanlon
C. V. Edwards, Sr.
G. E. McFarland
R. F. Birge
L. F. Hill
L. J. Halpin
P. M. Kersten
S. P. Leinbach
C. W. Seibert

R. L. Wicks
J. W. Ferguson
L. W. Swanson
H. J. Smith
E. M. Smith
W. L. Downing
Fred Sternagel
W. D. Abbott
O. N. Glesne

R. C. Hardin

Minutes of the May 16, 1962, meeting of the House of Delegates were approved as published in the July, 1962, JOURNAL OF THE IOWA MEDICAL SOCIETY.

Reports as published in the 1963 HANDBOOK FOR THE HOUSE OF DELEGATES were approved, except the following: The Preceptorship Committee report, which was referred to the Reference Committee on Miscellaneous Business; the Policy-Evaluation Committee report, which was referred to the Reference Committee on Insurance and Medical Service; and the report of the Committee on Medical Practice in Hospitals and Nursing Homes, which was referred to the Reference Committee on Miscellaneous Business.

The 10 resolutions that had been published in the HANDBOOK beginning at page 81, were also excluded, since they were to be presented at a later time under the heading of "New Business."

Reports of Officers

FROM THE OFFICE OF THE SECRETARY

The duties of this office include maintaining membership and dues records; conducting the official correspondence; and notifying members of meetings, officers of their election, and committee members of their appointments and duties. The secretary is also responsible for preparing minutes of all official meetings of the Society. Insofar as it is in his power, he uses the printed matter, correspondence and influence of his office to aid the councilors in organizing and improving the component societies, and in extending the power and usefulness of the Society.

The following points up some of the more important activities of the office of secretary:

1963 ANNUAL MEETING

The Program Committee for the 1963 annual meeting has completed the program, and it will be published in the March issue of the JOURNAL OF THE IOWA MEDICAL SOCIETY. Hand programs will be distributed at the time of the meeting. The office has cooperated with district councilors in organizing their caucuses in preparation for the annual meeting, including organization of the Nominating Committee.

HOUSE OF DELEGATES

Proceedings of the 1962 sessions of the House of Delegates were published in the July, 1962, JOURNAL. The usual administrative procedures in connection with the House of Delegates directives have occurred. As a part of the 1963 annual meeting, the House of Delegates will hold its first session on Sunday, April 7, at 10:00 a.m. Reference committee hearings will begin as soon as possible on Sunday afternoon following

adjournment of the House. The final session of the House of Delegates will be held at 8:00 a.m., Wednesday, April 10.

EXECUTIVE COUNCIL

Four meetings of this interim policy-making body have been held since the 1962 annual meeting. Progress reports from important committees of the Society were presented to the Executive Council for its action in some instances and for information in others. These included: Legislation, Osteopathy, Relative Value Study, Policy-Evaluation, Medical Practice in Hospitals and Nursing Homes, Prepayment, Chiropractic, Medical Education and Hospitals, Subcommittee on Medical Services to the Indigent. Miscellaneous items: Iowa Physicians' Political League, utilization committees, United States Chamber of Commerce Aircade, vexatious litigation, North Central Conference, annual meeting, Blue Shield, AMA Clinical Session, Iowa Welfare Association, Saskatchewan Medicare program, appointment of dean for the SUI College of Medicine, Student AMA, physician-pharmacist relations.

JUDICIAL COUNCIL

The Judicial Council, the Society's judicial authority, has held four meetings since the 1962 annual meeting; its fifth session is scheduled on February 27. At the organizational meeting of the Council, which was held on May 16, 1962, Dr. C. E. Radcliffe, of Iowa City, was elected chairman, and Dr. J. H. Sunderbruch, of Davenport, was elected secretary. The Judicial Council's major responsibility has been the approval of applicants for IMS membership. It has considered and disposed of various items of business involving memberships, ethics and other judicial matters.

COMMITTEES

The Society has 49 standing and special committees, most of which have met at least once during the year. Reports covering the activities of these groups appear elsewhere in this HANDBOOK, or will be presented as oral reports at the first session of the House of Delegates in April. To date, approximately 85 official committee meetings have been held, and prior to the annual meeting there will be numerous additional ones. These totals do not include informal meetings of committee members, or the conferences that have taken place by telephone. These approximate 130.

LIAISON WITH COUNTY MEDICAL SOCIETIES

Fall Conference for County Society Officers. On October 5, 1962, the IMS was host to approximately 165 physicians who represented county medical societies. These included county society presidents, secretaries, deputy councilors, legislative contact men, delegates, alternates, Blue Shield liaison physicians, county committee chairmen, and State Society officers and committee chairmen. The program included informative discussions of important issues, i.e., public relations and legislative plans, relations with osteopaths and pharmacists, health insurance topics, blue-ribbon county society projects, etc. Tentatively, the IMS plans to hold a conference for county society officers again next fall—probably on September 18.

Throughout the year, Society officers, members, and staff, have met with a number of county medical societies. Programs of these meetings included various

subjects and projects of interest to the Society members.

FIELD SERVICE

The Society's two field secretaries, Messrs. Gerald Buckles and Morris Bandy, have been active during the past year in contacting county medical societies and individual doctors, as well as other organizations, to promote numerous projects. The major part of their time has been devoted to activating county societies, individual physicians, and allied groups to implement programs in opposition to the enactment of King-Anderson type legislation, as well as other projects in the public interest. In January, field assignments were altered, and Mr. Buckles was authorized to travel the entire state. Mr. Bandy, also a field secretary, will spend the majority of his time during the months of January through May, on activities in connection with the Iowa General Assembly and committee assignments.

MAILINGS

Mailings during the year included: General News Bulletins, 9; Legislative Bulletins, 1; Legislative Contact Men, 4; "In the Public Interest" to members of the Iowa Legislature, Iowa's Congressional delegation in Washington, and all news outlets, 12; Deputy Councilor Newsletters, 4.

NATIONAL CONFERENCES

AMA conferences attended by one or more representatives of the Iowa Medical Society have included the Clinical and Annual Sessions, Conference on Aging, Conferences on Disaster Medical Care, Institute on Administration and Public Relations, Congress on Pre-paid Health Insurance, Conference on Mental Health, Legislative Conference, Congress on Occupational Health, Conference on Medical Aspects of Sports, Conference on Medical Service, Woman's Auxiliary Conference, Conference on Medical Education and Licensure.

Other national meetings attended by IMS representatives: Joint Council to Improve Health Care of the Aged, Michigan Congress of the Professions, and Conference of Medical Journal Editors.

REGIONAL CONFERENCES

AMA Regional Legislative Planning Session, North Central Medical Conference, Chamber of Commerce Regional Meeting, Minnesota State Medical Association Annual Meeting, State Medical Society of Wisconsin Annual Meeting, Illinois State Medical Society Annual Meeting, Regional Rural Health Conference, Conference of Farm Editors. Dr. Otto N. Glesne of Fort Dodge was named president of the North Central Medical Conference at the 1962 meeting.

STATE CONFERENCES

Annual Meeting of the Iowa Chapter of the American Academy of General Practice, Iowa Nursing Home Association Annual Meeting, Iowa Dental Association Annual Meeting, Iowa Veterinary Medical Association Annual Meeting, United Nations Day Observance, School Health Workshops, Public Health Association, Hawkeye Science Fair, Senior Day, Iowa Interprofessional Association, Annual Meetings of Blue Cross and Blue Shield, Iowa Society of Association Executives. Mr. Donald L. Taylor, executive director of the Iowa

Medical Society, was elected president of the Iowa Society of Association Executives at its annual meeting in May, 1962.

IOWA REPRESENTATION AT NATIONAL LEVEL

The Society has maintained its close liaison with the AMA and other national organizations. The IMS is represented on the AMA Council on Rural Health by Dr. S. P. Leinbach, of Belmond, who is its vice-chairman; on the Committee on Federal Medical Services by Dr. D. C. Conzett of Dubuque; on the Committee on Medical Practices by Dr. D. F. Ward of Dubuque; on the Council on Legislative Activities by Dr. F. C. Coleman of Des Moines, who was recently elected chairman. The IMS executive director is president of the National Association of Medical Society Executives. Miss Tina Preftakes, assistant to the director, is a member of the Editorial Board of THE EXECUTIVE, the house organ of the National Association of Medical Society Executives, and was recently named director of communications for the Association.

SERVICES TO THE WOMAN'S AUXILIARY

Services and facilities of the IMS headquarters office are available at all times to the Woman's Auxiliary to assist it in implementing its projects. The bulk of this work is handled by Mrs. Hazel Lammey, an executive assistant who is staff secretary to the Auxiliary. The staff assists the Woman's Auxiliary in arranging its annual meeting, preparation of its annual reports, and the maintenance of membership records and roster, as well as the preparation and issuance of the WOMAN'S AUXILIARY NEWS.

IMS MEMBERSHIPS

Memberships in the Iowa Medical Society during the year 1962 totaled 2,465 as compared to 2,475 for the preceding year. The 66 counties in which 100 per cent of the county society members held membership in the IMS, represented a slight increase over 1961. The number of eligible non-members remained at 54 for 1962. The number of ineligible non-members decreased from 51 in 1961 to 48 in 1962. Physicians retired or not in practice decreased from 93 in 1961 to 77 in 1962. The total membership percentage in 1962 remains at 98.

COUNTY SOCIETIES HAVING 100 PER CENT MEMBERSHIP IN IMS IN 1962

Adair	Dickinson	Lucas
Adams	Emmet	Lyon
Allamakee	Franklin	Madison
Appanoose	Greene	Mahaska
Audubon	Grundy	Marion
Boone	Hamilton	Marshall
Buchanan	Hardin	Mills
Butler	Harrison	Monona
Calhoun	Henry	Monroe
Cerro Gordo	Howard	Montgomery
Chickasaw	Humboldt	Muscatine
Clarke	Ida	Osceola
Clay	Iowa	Page
Crawford	Jackson	Palo Alto
Dallas-Guthrie	Jasper	Plymouth
Davis	Jefferson	Pocahontas
Decatur	Kossuth	Ringgold
Delaware	Lee	Sac

Sioux	Union	Wayne
Story	Van Buren	Webster
Tama	Wapello	Winneshiek
Taylor	Washington	Wright

1962 IMS MEMBERSHIP RECORD

County	Active Members	Associate Members	Resident Members on Resident License	Eligible Non-members	Ineligible Non-members	Not in Practice or Retired	Percentage
Adair	3	1					100
Adams	4						100
Allamakee	9					1	100
Appanoose	10					2	100
Audubon	4						100
Benton	10			1			91
Black Hawk	122	1		1			99
Boone	17						100
Bremer	16			1			94
Buchanan	26				4		100
Buena Vista	12			2			86
Butler	9						100
Calhoun	13					1	100
Carroll	21	1		2			92
Cass	9			1			90
Cedar	9			1			90
Cerro Gordo	70	1					100
Cherokee	27			1	9	1	96
Chickasaw	11	1					100
Clarke	6						100
Clay	14						100
Clayton	11	1		2			86
Clinton	43	2		1	2		98
Crawford	7						100
Dallas-Guthrie	23				6	1	100
Davis	11						100
Decatur	6					1	100
Delaware	10					1	100
Des Moines	43	2		3			94
Dickinson	8						100
Dubuque	76	3		2			98
Emmet	15						100
Fayette	19			1		1	95
Floyd	16			1			94
Franklin	6						100
Fremont	5			1			83
Greene	15					1	100
Grundy	8						100
Hamilton	11				1		100
Hancock-Winnebago	14			1	1		93
Hardin	18						100
Harrison	8					3	100
Henry	23				5	1	100
Howard	8						100
Humboldt	7						100
Ida	5					2	100
Iowa	13						100
Jackson	11						100
Jasper	20						100
Jefferson	12					1	100
Johnson	216	2		5		5	98
Jones	13			2			87
Keokuk	6			1			86
Kossuth	12						100
Lee	40						100
Linn	131	4		2	1	5	98
Louisa	2			3			40
Lucas	8						100
Lyon	7						100
Madison	7						100
Mahaska	18	1					100
Marion	18					7	100
Marshall	39						100
Mills	4				5	1	100
Mitchell	12			2			86
Monona	11					1	100
Monroe	5	1					100
Montgomery	12						100
Muscatine	19				1	1	100
O'Brien	12	1		1	2		93
Osceola	4						100
Page	20	1			6		100
Palo Alto	9						100
Plymouth	12					1	100
Pocahontas	7					1	100
Polk	317	16	5	4	2	22	99

County	Active Members	Associate Members	Resident Members on Resident License	Eligible Non-members	Ineligible Non-members	Not in Practice or Retired	Percentage
Pottawattamie	76			2	2	4	97
Poweshiek	8			4			67
Ringgold	1						100
Sac	7						100
Scott	103			1		2	99
Shelby	9			1		2	90
Sioux	12					1	100
Story	47	1				1	100
Tama	11						100
Taylor	2						100
Union	13						100
Van Buren	2						100
Wapello	51	2					100
Warren amalgamated with Polk							
Washington	12					2	100
Wayne	4	2					100
Webster	58					2	100
Winneshiek	7	1					100
Woodbury	117	3		3	1	2	97
Worth	4			1			80
Wright	19	1					100
	2,411	49	5	54	48	77	98

AMA MEMBERSHIP

The members of the Iowa Medical Society who were active members of the American Medical Association in 1962 numbered 2,361 (including active dues-exempt because of life membership, residency or military service). In addition 48 held associate memberships, 7 held service memberships (in Veterans Administration) and 5 held resident membership (members on temporary or resident licenses) in the AMA.

The 2,361 active AMA memberships in 1962 entitled Iowa to three AMA delegates. The 1962 AMA membership was 95.7 per cent of the total Iowa Medical Society membership.

R. F. BIRGE, M.D., Secretary

REPORT OF THE TREASURER

During the past year the expenses of the Society exceeded income by \$12,793.26. The deficit can be traced to three specific items: (1) Annual Meeting, (2) JOURNAL OF THE IOWA MEDICAL SOCIETY, and (3) Increased Committee Expenses. The following financial statements set forth the economic position of the IMS as of December 31, 1962.

In 1962, a contribution from the Baldrige-Beye Memorial Fund in the amount of \$2,141.00 was made to the Iowa Medical Society Educational Fund. The contribution consists of the assignment of \$1.00 for each dues-paying member of the Iowa Medical Society.

L. F. HILL, M.D., Treasurer

IOWA MEDICAL SOCIETY

Balance Sheet—December 31, 1962

ASSETS

Current Assets:	
IMS Checking Accounts	\$ 8,185.59
IMS Saving Accounts	21,366.46
Corporation Stock	27,706.85
Government Securities	31,000.00
Medicare	5,000.00

Notes Receivable (Baldridge-Beye)	1,378.00	
Pension Insurance— Due From Employees	1,292.09	
Total Current Assets		\$ 95,928.99
Fixed Assets:		
Land	\$ 5,000.00	
Building	\$45,275.85	
Less: Reserve for Depreciation 23,500.00	21,775.85	
Provision for Building Fund ..	23,896.46	
Net Fixed Assets		\$ 50,672.31
TOTAL ASSETS		\$146,601.30

LIABILITIES AND NET WORTH

Liabilities:		
State Personal and Property Tax	\$ 1,859.19	
Accrued Federal Unemployment Tax	190.33	
Baldridge-Beye Memorial Fund Balance 12-31-62	1,378.00	
TOTAL LIABILITIES		\$ 3,427.52

Net Worth:		
Balance 1-1-62	\$150,290.02	
Less:		
Net Expense 1962 .	12,793.26	
		\$137,496.76

Investment Income in Corporation Common Stock (Net):		
Balance 1-1-62	\$ 3,158.25	
Add: Net Income 1962	2,122.31	
		5,280.56

Income Earned— Provision for Building Fund ..	396.46	
Total Net Worth		\$143,173.78
TOTAL LIABILITIES AND NET WORTH		\$146,601.30

IOWA MEDICAL SOCIETY
STATEMENT OF INCOME AND EXPENSES

For the Year Ended December 31, 1962

Income for the Year 1962:		
Dues—State Society	\$191,755.00	
Interest—		
Government Securities	1,860.42	
Interest—Savings Accounts ..	724.19	
Medicare	1,265.26	
Miscellaneous	450.56	
AMA Collection Commission .	724.33	
TOTAL INCOME		\$196,779.76

Expenses for the Year 1962:		
Annual Session (Net)	\$ 4,152.74	
Baldridge-Beye Memorial Fund	2,141.00	
Council Expense	2,390.39	
County Society Services	2,172.18	
Depreciation—Building	4,500.00	
Dues and Subscriptions	1,405.68	
General Administrative Expense	1,009.90	
Insurance	2,804.95	
JOURNAL (Net)	16,187.41	
Legal Expense	6,000.00	
Light, Gas and Water	1,162.96	
Office Furniture and Fixtures	180.00	
Office Stationery and Supplies	4,282.73	
Pension and Disability Insurance	5,101.32	
Postage	3,104.02	
Repairs and Maintenance	288.91	
Salaries	81,526.00	
Salaries—Outside Secretary ..	764.50	
Service Contracts—Machines .	688.02	
Taxes:		
Personal and Property	1,879.19	
Social Security Taxes	2,044.14	
Unemployment—Federal ...	433.72	
Unemployment—State	118.96	
Use Tax	774.17	
Telephone and Telegraph	5,057.13	
Travel—Officer	7,664.07	
Travel—Salaried Employee ...	13,361.99	
Trustee Expense	2,253.33	
Woman's Auxiliary	1,873.23	
Committee Expense:		
Grievance	1,604.30	
Legislative	14,482.85	
Medical Service	3,554.50	
Public Health	373.71	
Public Relations	9,461.70	
Other Committees	4,773.32	
TOTAL EXPENSES		\$209,573.02
Net Expenses for 1962 ..		\$ 12,793.26

BOARD OF TRUSTEES

As has been customary, the Board of Trustees will present a comprehensive report of its activities at the first session of the House of Delegates in April. The Board urges delegates and alternate delegates to study carefully all of the reports incorporated in this **HANDBOOK**, and especially the reports of the secretary and treasurer.

As directed by the House of Delegates last year, the Board of Trustees has held a series of meetings with Blue Shield representatives to discuss numerous areas of mutual interest. A report on these informal conferences will be presented to the House of Delegates as a part of the Board's supplemental report.

S. P. LEINBACH, M.D., *Chairman*

Report of the Judicial Council

FIRST DISTRICT

Many polio clinics were organized in this district for the distribution of polio vaccine at a nominal cost to the public. There was some feeling that we should show this type of enthusiasm and cooperation in other areas of prophylaxis, such as active tetanus immunization.

Again there has been a decline in the use of the preceptorship program by physicians in this district.

A number of new physicians have entered general practice in this area, but we still have communities that are very short of physicians.

There has been considerable new hospital construction in this area, and individual hospital auxiliaries have contributed a great deal to our hospitals.

A few physicians have been active politically, but there has been little organized action. However, in general, cooperation among physicians in this district is increasing substantially.

CLARKSON L. KELLY, JR., M.D., *Councilor*
Deputy Councilors:

C. R. ROMINGER, M.D., Allamakee
R. E. SHAW, M.D., Bremer
M. J. McGRANE, M.D., Chickasaw
P. R. V. HOMMEL, M.D., Clayton
A. F. GRANDINETTI, M.D., Fayette
E. V. Ayers, M.D., Floyd
P. A. Nierling, M.D., Howard
T. E. BLONG, M.D., Mitchell
E. F. HAGEN, M.D., Winneshiek

SECOND DISTRICT

Here is a report summarizing activities in the Second Councilor District, as reported by the deputy councilors. The activities have been varied, with some areas more active than others.

In Humboldt County, the county society continued its program of pre-school examinations and immunization of children throughout the county. The doctors also examined all members of football squads in the schools, and had a doctor in attendance at each home football game. In cooperation with the Humboldt Kiwanis Club, an oral polio immunization program was sponsored for the county. One member of the county society served on a panel at a vocational guidance meeting, presenting a description of medicine as a profession.

The Hancock-Winnebago Medical Society had regular monthly meetings throughout the year. The scheduled two-county oral polio immunization clinic originally planned for 1962 was cancelled and has tentatively been scheduled to start in March, 1963. This program will be sponsored by the Hancock-Winnebago County Medical Society and the county nurses.

The Butler County Medical Society participated in an oral polio clinic held in Allison. Type I was given in April, Type III in May, and Type II in September, 1962.

Kossuth County Medical Society has held periodic meetings in conjunction with staff meetings at St. Anne's Hospital, in Algona. A plan was drawn for oral polio vaccine administration in the fall of 1962, but was cancelled with the hope of re-instituting it in the near future.

The Franklin County Medical Society has been extremely active in opposing medical care under Social Security, distributing information and seeing that all newspapers in the county carried advertisements and news releases to that effect.

The Wright County Medical Society held 10 scientific meetings during 1962. During the year diphtheria, tetanus and smallpox immunization programs were carried out in all the public schools in Wright County. Sabin polio immunization clinics were set up for the fall of 1962, but because of the adverse publicity encountered with Type III vaccine, they have not yet been held.

The Cerro Gordo County Medical Society has had monthly scientific meetings, with guest speakers at each of them. During the late spring, a massive Sabin poliomyelitis vaccine program was carried out, during which approximately 40,000 adults and children received the full course of vaccine without any adverse effects. The Cerro Gordo Medical Society was first in the State of Iowa and one of the first communities in the United States to carry out this entire program.

For political and non-scientific purposes, the physicians of this area have organized under the title of Doctors of North Iowa. An active interest was manifested during the recent political campaign, both in action and financial backing of the supported candidates, and in attendance at political gatherings. The Doctors of North Iowa were fortunate in securing Dr. Edward R. Annis as speaker for a large political rally, and later had him as a guest speaker on the local TV station.

One or another of the local physicians appears on a weekly television program called "Ask the Doctor." This program has been very well received, and it is thought to improve medicine's "image."

It is with great pride that I report the activities of the county medical societies in the Second Councilor District. I am particularly encouraged by the active part all of them are taking in preventive medicine.

For the future, I hope that more of them become active politically.

JEROME F. PAULSON, M.D., *Councilor*
Deputy Councilors:

F. F. McKEAN, M.D., Butler
H. G. MARINOS, M.D., Cerro Gordo
W. L. RANDALL, M.D., Franklin
J. R. CAMP, M.D., Hancock-Winnebago
I. T. SCHULTZ, M.D., Humboldt
M. G. BOURNE, M.D., Kossuth
C. T. BERGEN, M.D., Worth
R. F. MCCOOL, M.D., Wright

THIRD DISTRICT

As far as organizational endeavor is concerned, activity in the Third Councilor District during the past year has consisted of the individual efforts of the county medical societies.

All county groups have held scheduled meetings, and have sponsored and helped carry out health programs in connection with local school, Farm Bureau, and other units.

Oral vaccine for polio immunization on a mass basis was given in most areas of the District.

We are proud of the members from our District who are contributing much to State Society effort through

committee work, and of the active Woman's Auxiliaries, which held a District meeting with the State Auxiliary officers in the late summer.

DEAN H. KING, M.D., *Councilor*

Deputy Councilors:

C. C. JONES, M.D., Clay
E. L. JOHNSON, M.D., Dickinson
R. L. COX, M.D., Emmet
S. H. COOK, M.D., Lyon
E. B. GETTY, M.D., O'Brien
F. B. O'LEARY, M.D., Osceola
H. L. BRERETON, M.D., Palo Alto
J. M. RHODES, M.D., Pocahontas
M. O. LARSON, M.D., Sioux

FOURTH DISTRICT

The various societies in the District continued their regular scientific meetings during the past year. There is an increasing interest among the membership in the relationship between organized medicine and the problems of the community.

The Woodbury County Medical Society underwent reorganization, and proceeded to incorporate as a non-profit organization.

I should like to thank the members for their excellent cooperation, and to extend special thanks to my deputy councilors.

MARTIN A. BLACKSTONE, M.D., *Councilor*

Deputy Councilors:

R. R. HANSEN, M.D., Buena Vista
J. M. TIERNEY, M.D., Carroll
H. J. FISHMAN, M.D., Cherokee
R. A. HUBER, M.D., Crawford
J. B. DRESSLER, M.D., Ida
L. A. GAUKEL, M.D., Monona
J. W. GAUGER, M.D., Sac
C. M. MARRIOTT, M.D., Woodbury
R. J. FISCH, M.D., Plymouth

FIFTH DISTRICT

County medical societies of the Fifth District report a vigorous interest in the past year's election campaign. The deputy councilors also note that the members continue to be alert regarding Kerr-Mills legislation and appropriations, as well as opposing the Social Security approach.

Several Medical Auxiliary members of the District have been active on State Committees. Hamilton County Auxiliary holds regular meetings and sponsors a future nurses club. Boone County Auxiliary is active in sponsoring a future nurses club, and an essay contest in cooperation with the county medical society. A Boone High School student won the state contest and placed third in the national contest with her essay.

Webster County Society, with the Fort Dodge Junior Chamber of Commerce, carried out a successful oral polio immunization program. Several Webster County Society members are active on State Society committees. Scientific papers were presented at well-attended regular meetings this past year.

Regular meetings were held by the Dallas-Guthrie Society. Good attendance is reported for the scientific programs. Dallas County is proud to have another president of Iowa Chapter of A.A.G.P. William Castles, M.D., is now president-elect of that organization.

The Calhoun Society sponsors \$50.00 merit awards to seven high school seniors. This is an annual project and has proved valuable in medical public relations.

Hamilton County Society has conducted a successful campaign and clinic for Salk vaccine, and plans a Sabin oral program for 1963. Its business and scientific meetings have been held regularly throughout the year.

The Story and Boone Societies continue to hold combined meetings, with speakers from outside the locality. Story County sponsored an oral polio immunization clinic in which over 80 per cent of the population received the vaccine. Each year, a member of the Boone County Society presents an award to seven or eight local high school students for proficiency in mathematics and science. This is the Kevin Puntenney Award, set up by Dr. Puntenney as a memorial for his son, Kevin. Its purpose is to stimulate superior students to consider medicine as a career.

During 1962, because of the expressed concern of members of the Polk County Medical Society, the Des Moines Public Schools employed a qualified full-time director of public school health. We witnessed the organization of the Community Blood Bank of Central Iowa, following a year of controversy with labor groups. Through the efforts of the Dean's Committee, Dr. Robert E. Carter came to Broadlawns Hospital, January 1, as director of education for the two-year family physician training program established July 1, 1962. The DES MOINES REGISTER AND TRIBUNE cooperated with the Polk County Society in perfecting an organization to conduct a community-wide oral immunization program, but this program was postponed pending further study of public health data. Again through the cooperation of the DES MOINES REGISTER AND TRIBUNE, and the Iowa Chapter of the Arthritis and Rheumatism Foundation, a public forum on the subject of arthritis was held in the KRNT Theater. The "future doctors' program" has continued to progress in the Des Moines high schools. The Home Care-Homemaker Service became operative April 1, and has served a very effective purpose to many people in the community confined to their homes because of illness. Members of the Society have provided some outstanding programs on health and medical affairs before civic groups.

The Polk County Society, in addition to planning for the oral polio immunization program, continued to experiment with low-cost clinics sponsored by the unions and the Public Health Department. Also, a survey of nursing home occupants in a T.B. detection program was carried out. Through cooperation of the Farm Bureau and the Polk County Osteopathic Society a series of articles on tetanus immunization was published.

Our Legislative Committee was concerned with the well-organized opposition to King-Anderson legislation; and to the necessity for an increased tax levy for the more effective operation of Broadlawns Hospital.

Only eight cases were formally filed with the Polk County Mediation Committee. A heart-sound taping program in the public and parochial schools was implemented on recommendation by the Polk County Heart Council, and the State Department of Health, with the approval of the Polk County Society. The pre-school health program, for examination and immunization of children entering school last fall, approached the all-time high of 53 per cent.

Seven scientific meetings of the Society, as well as the usual Fall Party, were held during the year.

These highlights of activities in Polk and Warren Counties are evidence of the very sincere efforts being made to fulfill the purposes of the Society.

My sincere thanks to all of the county society officers, delegates and deputy councilors. They have been most cooperative during the past year.

RALPH L. WICKS, M.D., *Councilor*

Deputy Councilors:

E. E. LINDER, M.D., Boone
G. S. ROST, M.D., Calhoun
A. G. FELTER, M.D., Dallas
W. A. SEIDLER, M.D., Guthrie
E. D. THOMPSON, M.D., Greene
G. A. PASCHAL, M.D., Hamilton
J. D. CONNER, M.D., Story
J. G. THOMSEN, M.D., Polk
C. J. BAKER, M.D., Webster

SIXTH DISTRICT

The activities of the counties of the Sixth District have been pretty much as in past years. The immunization clinics have gone on as usual, but in addition, four of the counties have sponsored Sabin vaccine clinics.

Most activity, as in the past, has been centered in the larger counties. Black Hawk County reports plans for a new St. Francis Hospital, and additions to the Sartori and Schoitz Hospitals. The Woman's Auxiliary has been active as usual with its annual Medicine Ball which is a benefit for hospitals in the county. The Black Hawk County Medical Society is continuing its sponsorship of the Northeast Iowa Clinical Conference each fall.

Marshall County reports continued expansion of Mercy Hospital and Deaconess Hospital, both in Marshalltown.

A new 47-bed nursing home was constructed at Grundy Center, just south of the County Hospital.

Tama County resumed the doctor-attorney dinner party this year, and the wives of both groups were entertained by a speaker. The event was an outstanding success.

The Sixth District has had a net gain of nine practicing physicians.

JOHN W. FERGUSON, M.D., *Councilor*

Deputy Councilors:

N. C. KNOSP, M.D., Benton
C. D. ELLYSON, M.D., Black Hawk
E. A. REEDHOLM, M.D., Grundy
L. F. PARKER, M.D., Hardin
C. F. WATTS, M.D., Iowa
J. W. FERGUSON, M.D., Jasper
R. C. CARPENTER, M.D., Marshall
S. D. PORTER, M.D., Poweshiek
A. J. HAVLIK, M.D., Tama

SEVENTH DISTRICT

In 1962, as in the past, the physicians of the Seventh District have been active in professional advancement through attendance at scientific meetings and at courses in Iowa City and elsewhere over the nation. This continual striving for betterment and for acquisition of new knowledge in his field, is the hallmark of the dedicated professional man.

Most of the component counties had regular scientific

meetings throughout the year, and many physicians from the smaller counties availed themselves of the excellent presentations by the medical societies in nearby larger ones.

In addition to the scientific presentations, local programs of dedicated service to communities were carried out. Physicians served on building committees for local hospitals, schools and churches, fostered the operation of local blood banks, provided free medical examinations for students participating in local sports events, supported polio-immunization clinics, aided the Auxiliary in providing nursing scholarships and in other civic projects, participated in "Diabetes Detection Week," and studied a plan to disseminate information to the lay public about the "Medical Self-Help" program.

The Clinton County and Linn County societies have participated also in radio and television programs, respectively, which provided information of interest to the lay public about medical disorders and problems.

The Linn County Society has done yeoman work for recruitment by conducting a summer-school course to provide high school students with information about many facets of the practice of medicine. This course is designed to stimulate intelligent and interested young people to undertake medical careers.

I wish to extend my warm thanks to the deputy councilors listed below for their part in making information available to their county societies, and for their invaluable help in carrying out the programs of the Iowa Medical Society.

CHRISTIAN E. RADCLIFFE, M.D., *Councilor*

Deputy Councilors:

PAUL J. LEEHEY, M.D., Buchanan
OTTO E. KRUSE, M.D., Cedar
JOHN E. TYRRELL, M.D., Delaware
MILTON E. BARRENT, M.D., Clinton
ROBERT J. McNAMARA, M.D., Dubuque
FRED J. SWIFT, JR., M.D., Jackson
GERALD W. HOWE, M.D., Johnson
L. DEAN CARAWAY, M.D., Jones
HARRY J. JONES, M.D., Linn

EIGHTH DISTRICT

The medical societies in the Eighth Councilor District have been very active this past year.

The Muscatine County group has been most verbal in its fight for free enterprise. The meetings and contacts its members have made have been very fruitful, and the doctors are to be complimented for their activities.

Lee and Jefferson County doctors were exceptional in their financial support of the Iowa Physicians Political League, and deserve commendation from all of the rest of us.

The Des Moines and Scott County doctors carried on excellent local political campaigns.

Des Moines County Medical Society carried out an oral polio vaccine program for some 24,000 participants in October and November, and plans to offer the third dose in March. This County Society also had its usual joint meeting with the American Academy of General Practice.

Each medical society carried on its regular scientific programs, but all doctors in the District are aware that their problems are truly more socio-economic than scientific at this time.

I am proud of the activity of the Eighth District doctors, and the deputy councilors are to be complimented for their support.

JOHN H. SUNDERBRUCH, M.D., *Councilor*

Deputy Councilors:

R. B. ALLEN, M.D., Des Moines
J. S. JACKSON, M.D., Henry
J. W. CASTELL M.D., Jefferson
G. H. ASHLINE, M.D., Lee
G. C. MCGINNIS, M.D., Lee
E. S. GROBEN, M.D., Louisa
K. E. WILCOX, M.D., Muscatine
ERLING LARSON, M.D., Scott
KIYOSHI FURUMOTO, M.D., Van Buren
G. E. MONTGOMERY, M.D., Washington

NINTH DISTRICT

Activities in the Ninth Judicial Councilor District have been limited largely to medical matters during the past year. Interest in political activities has been moderate, with average participation both financially and politically. The councilor has visited the county units where meetings are regularly held, but his activities have been relatively easy during the past year. Community enterprises (blood banks, tumor clinics, oral polio vaccine clinics, etc.) in various counties have been well-attended and well-received.

Mahaska County has successfully completed a bond campaign, and is presently in the process of receiving final plans for construction of an entirely new hospital, one which has been sorely needed, and which will add tremendously to the doctors' efficiency.

All in all this has been a quiet year, and my thanks to Deputy Councilors for their assistance in the conduct of IMS affairs.

KENNETH E. LISTER, M.D., *Councilor*

Deputy Councilors:

E. A. LARSEN, M.D., Appanoose
P. T. MEYERS, M.D., Davis
E. R. GANN, M.D., Keokuk
A. L. YOCOM, M.D., Lucas
G. S. ATKINSON, M.D., Mahaska
G. K. VAN ZEE, M.D., Marion
D. N. ORELUP, M.D., Monroe
L. J. GUGLE, M.D., Wapello
C. N. HYATT, M.D., Wayne

TENTH DISTRICT

The resignation of Dr. Harold Peggs as councilor for the Tenth District was submitted before the 1962 Iowa Medical Society meeting. I was elected to fill his unexpired term.

During the balance of the year a few of the county medical societies sponsored Sabin polio immunization programs which were fairly successful, but other county societies decided not to institute the program, for the time being.

The Decatur and Ringgold County Societies combine their meetings, and have had monthly meetings except during the summer. The Decatur County voters defeated an effort to build a new county hospital.

The Union County doctors were indirectly active in supporting the successful campaign for the passage of a bond issue to build a 70-bed hospital at Creston. Dr. Jed Paul, a radiologist, joined the Creston Clinic, filling the vacancy caused by Dr. Peggs' departure.

Some activity has been noted in a few of the counties with regard to designating osteopaths "with whom it shall not be unethical for doctors of medicine to associate professionally." It is thought that this action will improve relations and be beneficial in the practice of medicine especially in the smaller hospitals.

ELMO E. GAMET, M.D., *Councilor*

Deputy Councilors:

A. J. GANTZ, M.D., Adair
J. C. NOLAN, M.D., Adams
G. B. BRISTOW, M.D., Clarke
E. E. GAMET, M.D., Decatur
J. E. EVANS, M.D., Madison
D. E. MITCHELL, M.D., Ringgold
R. W. BOULDEN, M.D., Taylor
DALLAS YORK, M.D., Union

ELEVENTH DISTRICT

A number of the counties in the Eleventh Councilor District have medical societies that are no more than occasionally active either because their membership is small or because hospital staff meetings provide for an exchange of ideas among physicians and serve several of the other functions of medical society meetings.

The Page County Medical Society held its regular fall conference in 1962, and it was well attended by doctors from throughout southwest Iowa. It also conducted three successful clinics for the administration of Sabin poliomyelitis vaccine. At Clarinda, the proceeds were used to purchase a resuscitator and an electrocardiograph for the community, and to make a contribution (\$300) to the high school recreation fund. Similar worthwhile uses were found for the proceeds of the Shenandoah undertaking.

During the early part of the year, the Pottawattamie County Medical Society held a dinner and conference for medical assistants at Hotel Chieftain, Council Bluffs, in cooperation with the Iowa Medical Society and Blue Shield. The attendance was approximately 75, and the program was well received. The Society also sponsored polio immunization clinics, at which Types I, II and III of Sabin vaccine were given to approximately 65,000 people, and the excess of receipts over expenses was distributed to various charitable organizations in Pottawattamie County. During the late summer and in the early fall, a first-aid program was given to firemen in Council Bluffs, under the direction of Dr. Ralph Hopp. Firemen from the small communities in the County also attended. In addition, the Society paid the cost of sending a number of firemen from Pottawattamie County to an intensive first-aid program given by the University of Nebraska College of Medicine.

The Pottawattamie County Society has been working with the Council Bluffs P.T.A. Council in an effort to promote immunizations for all school children, but there has been a difference of opinion between the two groups as to the method of approach and the method of administration. These negotiations are continuing. The Society is also working diligently with the local Red Cross chapter in an attempt to promote the blood program. The Red Cross has had difficulties in obtaining sufficient blood, and in obtaining sufficient funds to maintain its position in the Regional Blood Center.

Of the current issues confronting organized medicine, the implementation of the Kerr-Mills Act is the one

which the doctors in the Eleventh Councilor District regard as most vital.

- W. G. KUEHN, M.D., Councilor
- Deputy Councilors:
 - H. K. MERSELIS, M.D., Audubon
 - E. M. JUEL, M.D., Atlantic
 - W. L. RANDALL, M.D., Hampton
 - A. C. BERGSTROM, M.D., Harrison
 - M. L. SCHEFFEL, M.D., Mills
 - H. E. BASTRON, M.D., Montgomery
 - K. J. GEE, M.D., Page
 - G. H. PESTER, M.D., Pottawattamie
 - J. H. SPEARING, M.D., Shelby

Reports of Standing Committees

COMMITTEE ON LEGISLATION

NATIONAL

King-Anderson Bill. A significant victory for American medicine was achieved on July 17, 1962, when the Senate voted 52-48 to table and, in effect, to kill an amendment to provide health care for the aged through Social Security financing.

The membership of the IMS was kept informed of the status of King-Anderson type legislation throughout the 87th Session of Congress, and it is not necessary to report in detail on this subject. It is the opinion of the Committee on Legislation that only through diligent efforts on the part of the medical profession were the efforts of the proponents of King-Anderson defeated.

The Committee on Legislation is certain that attempts will be made in the 88th Session of Congress to attach medical care financing to the Social Security System, and extensive time and effort on the part of every doctor of medicine will be required to defeat this type of legislation once again.

Other National Legislation. The Committee on Legislation is kept current on the status of all national legislation of medical interest through the AMA, and also through the Society's contact with members of the Iowa Congressional delegation in Washington. Apropos of the AMA Council on Legislation, it should be mentioned that Dr. Frank C. Coleman, of Des Moines, recently became chairman of that body.

The AMA and the IMS closely observed H.R. 10, commonly referred to as the Keogh Bill, and its passage by the 87th Session of Congress. This bill, in its final form, did not contain all of the features desired by the self-employed, but at least it is a step in the direction of correcting tax inequities for this segment of the populace.

Annual Washington Conference. Representatives from the IMS are scheduled to meet with members of the Iowa Congressional delegation in Washington, D. C., on March 5. A report of that meeting will be included in a supplemental report.

STATE LEGISLATION

As is well known, the 59th Iowa General Assembly enacted a highly acceptable medical aid for the aged law. Unfortunately, efforts to obtain an appropriation to implement the law were unsuccessful.

At the time this is written, considerable efforts are being made in the 60th General Assembly to obtain (a) a satisfactory appropriation, (b) a desirable method of implementation.

Further details regarding medical aid to the aged will be included in a supplemental report.

Other matters of state legislation requiring extensive study are (1) an MD-DO composite board of examiners, (2) the proposed nurses' practice act, (3) radiation control, (4) mental health proposals and other legislation pertinent to the medical profession.

The Committee on Legislation is now evaluating proposals for legislation which have been considered by Iowa Medical Society committees. Any item which requires action by the House of Delegates or has been referred to the Committee for consideration and recommendation will be included in a supplemental report.

The Committee once again wishes to express its appreciation to the county legislative contact men, who continue to perform a most valuable and, indeed, indispensable function. Each county legislative contact man has responded immediately when called upon for assistance. This line of communication has been utilized time and again to aid the Committee in carrying out the duties with which it has been charged.

HOMER E. WICHERN, M.D., Chairman

NECROLOGY COMMITTEE

The following members of the Iowa Medical Society died during the year 1962:

	Age
Royal G. Anspach, Colfax	77
Bernard C. Barnes, Des Moines	58
Guy E. Barr, Sioux City	77
Peter W. Beckman, Perry	86
Edward F. Beeh, Fort Dodge	73
George W. Behrens, Davenport	78
Edward P. Bell, Pleasantville	89
Wm. Frederick Boiler, Iowa City	81
C. Herbert Brush, Shenandoah	70
Andros Carson, Des Moines	99
Leo W. Chain, Dedham	69
Jay C. Cooper, Villisca	84
Sylvannus W. Corbin, Corydon	77
George F. Dolmage, Buffalo Center	83
Tarana J. G. Dulin, Iowa City	84
Frank E. Foulk, Des Moines	82
Clarence D. N. Gilfillan, Pomona, California	56
Gordon F. Harkness, Davenport	82
Peter M. Herny, Prairie City	75
Don E. Hill, Clinton	59
Joseph W. Holtey, Ossian	56
Francis W. Houlihan, Ackley	52
Audra D. James, Des Moines	64
George A. Jenkins, Albia	82
Charles W. Keith, Strawberry Point	83
Lyle W. Koontz, Vinton	60
John A. Liken, Creston	64
Edward Luke, Washington, D. C.	86
Ronald F. Martin, Sioux City	56
Sidney D. Martin, Carroll	74
Don H. Newland, Belle Plaine	68
Evelyn M. Olson, Winterset	56
Albin B. Phillips, Clear Lake	85
Leonard O. Riggert, Clinton	70
Francis M. Roberts, Knoxville	92

Clark W. Rominger, Waukon 81
Paul H. Schaefer, University City, Missouri 82
Benjamin B. Sells, Independence 82
Raymond J. Stephen, Cedar Rapids 70
Walter A. Sternberg, Corona del Mar, California .. 87
Percy E. Stuart, Nashua 85
Frederick J. Swift, Sr., Maquoketa 79
George A. Sywassink, Muscatine 62
Lawrence A. Taylor, Ottumwa 65
Roy I. Theisen, Dubuque 61
Clarence E. Van Epps, Phoenix, Arizona 86
Otto R. Voss, Davenport 83
Ernest R. Young, Dubuque 90

MEDICO-LEGAL COMMITTEE

The Medico-Legal Committee did not have a regularly scheduled meeting this year. There was one case on which the chairman of the Committee met with legal counsel to review the results of the case referred.

VAN C. ROBINSON, M.D., *Chairman*

COMMITTEE ON ARTICLES OF INCORPORATION AND BY-LAWS

To date, the Committee on Articles of Incorporation and By-Laws has received no proposals for amendments. However, it understands that some may be forthcoming from the Plan and Scope Committee that is presently studying the structure and functioning of Society committees. If the Plan and Scope Committee submits amendments to this Committee for consideration at the 1963 annual meeting, they will be incorporated in a supplemental report and presented on Sunday, April 7.

P. F. CHESNUT, M.D., *Chairman*

COMMITTEE ON MEDICAL SERVICE

Although the medical service subcommittees have been active during the past year, the "parent group" has had no occasion to meet.

The Subcommittee on Medical Services to the Indigent has continued to meet with the State Board of Social Welfare to discuss the Vendor Payment Program, and Dr. Sternhill's report on that Subcommittee's activities appears elsewhere in this HANDBOOK.

The Subcommittee on Prepayment Medical Care was represented at the third National Congress on Prepaid Health Insurance on February 15-16, 1963. The discussions and workshops dealt with all phases of prepayment plans including Blue Shield, commercial insurance, unions, and government. This Subcommittee has continued to maintain liaison with Blue Shield, and also with commercial insurance companies through the medium of the Health Insurance Council.

The IMS continues to serve as fiscal agent for the Department of Defense as regards Medicare, and has paid out \$65,714.17 to Iowa physicians through that program during the past year.

The new and expanded HANDBOOK OF RESOURCES AVAILABLE TO PHYSICIANS is now being printed and should be released shortly.

Meetings for doctors' office assistants will continue as a function of the IMS. In these meetings, the role of the county medical society will be emphasized.

GEORGE G. YOUNG, M.D., *Chairman*

REPORT OF THE GRIEVANCE COMMITTEE

The Iowa Medical Society Grievance Committee held meetings a month or six weeks apart throughout the year, depending upon the number of cases to be considered. At the start of 1962 there was a backlog of a small number of cases, and 22 new cases were presented during the year. At the end of the year, all cases had been disposed of, three of them having been referred to the Judicial Council for further action. There are at the present time no active grievances for consideration. The members of the Committee have performed their duties, and the attendance at the meetings has been excellent. At one meeting, indeed, every member of the Grievance Committee was present.

It is the opinion of the Grievance Committee that the major source of grievances rests in the areas of misunderstandings, over-charges, and implied and frankly expressed beliefs on the part of the patient that poor treatment has been provided. Lack of understanding, we feel, is due to a failure of communication on the part of either the doctor or the patient, or both, and we urge all doctors to take time to explain to their patients the nature of the treatment proposed, what can be expected from it, and to answer all of the patient's or relatives' questions as completely as possible.

As regards fees, there is no question but that there are a few members of the profession whose charges are excessive. It is these few who cause practically all of our complaints, and leave a very poor image of the doctor before the general public. These over-charges have involved the patient personally, in some instances, and in others have involved insurance carriers and similar third parties.

Patients generally have developed a concept of medical care which they feel requires complete restoration of their physical or mental condition, or, one might say, perfect results. It is very difficult to convince people that this is an impossibility. In this regard, also, members of our profession consciously or unconsciously make statements regarding the type or efficacy of treatment given by another physician. In this regard, the Committee has suggested that members of the Grievance Committee be asked to address medical students on the ethical questions involved when talking to patients or relatives.

During the last year grievances have been referred to the Committee by the patient, by relatives of the patient, by insurance carriers, by Blue Shield, and by county medical society grievance committees.

HERBERT C. MERILLAT, M.D., *Chairman*

SUBCOMMITTEE ON MEDICAL SERVICES TO THE INDIGENT

The Subcommittee began its fiscal year of 1962-63 with the same mandate that had been given by the House of Delegates the previous year—namely, a re-evaluation of fees paid to dispensing physicians, a re-assessment of the idea of using a fiscal agent other than the State Board of Social Welfare, and a review of the current fee schedule for services rendered by physicians under the provisions of the Vendor Program. In order to facilitate a more workable plan for the solution of these problems, your Subcommittee recommended the appointment of subcommittees composed of members of this Subcommittee to meet with counterparts from the State Board of Social Welfare.

At the only meeting that the Subcommittee held with the State Board group, this proposition was presented and promptly accepted. Prior to that meeting, at the instance of the Executive Council of the Society, a limited survey of drug costs to dispensing physicians was made and presented to the Board of Social Welfare. On the basis of that survey, the Board group ruled that insufficient evidence was offered to justify an increase in fees. It left the door open for further negotiation on this matter, if and when more substantiating evidence is presented to justify further study and consideration. The Executive Council was so apprized, but to date no such evidence has been produced. It appears to this Subcommittee that apathy or indifference prevails among the dispensing physicians who could provide it with the statistics needed to fortify their case for a more equitable fee.

The State Board of Social Welfare presented our Subcommittee with some data collected from 10 states employing fiscal agents other than state agencies. From the survey, it appears that fiscal agents add very little to mitigate the basic differences between doctors and social welfare agencies. A common grievance which is apparent in the surveys is the long delay between billing and payment which serves only to provoke and irritate the vendors of medical services to the indigent.

In the matter of renegotiation of physicians' fees, the Board of Social Welfare was advised that a subcommittee of this Subcommittee had been appointed to meet with a similar committee representing the Board, for the purpose of exploring all the facets of this problem. It was recommended that discussion be delayed until such time as the new Iowa Unit Fee Index was published by the Iowa Medical Society. Then, a most unfortunate thing happened. The State Board of Social Welfare, without consulting the subcommittee which had been appointed to consider this special order of business, rejected the new Unit Fee Index and restated its position of ordering payments based on the original fee schedule.

At the instance of your chairman, the Board of Social Welfare, through its chairman Mr. Putney, wrote to Dr. O'Brien, of Fort Dodge, who heads the medical group of the subcommittee of the Subcommittee, and told him that the Board's action had been an error and that a meeting would be called in the very near future to reassess the entire matter of fees in light of the new and revised Unit Fee Index. At this writing, no meeting has been scheduled, and therefore, no further progress in this matter can be reported.

Over the past year, the Subcommittee has been aware of an increasing reluctance on the part of the Board of Social Welfare to negotiate with the members of the Subcommittee. The Board has shown a tendency toward unilateral decisions without prior consultation with the members of the Medical Society, and this attitude seems to be growing stronger as time goes on.

Finally, there remains the perennial problem of counties that have no remedial or checking committees. With the exception of Webster County, where members provide care for the indigent outside the scope of the Vendor Program, there are four counties in which members submit bills for services rendered to the indigent in their respective communities, but do not review these bills with the social welfare agencies. Accordingly, such bills are forwarded to Des Moines, where a medical committee distant from the source of the service passes on all matters relating to services

and fees. It is the earnest hope of this Subcommittee that the physicians of these counties will reappraise their positions and will appoint the appropriate committees to review the work of their colleagues, and thus retain the local control that is the avowed objective of the Vendor Program.

Your chairman acknowledges with deep gratitude the cooperative assistance of all the members of the Subcommittee and of the staff of the Iowa Medical Society.

I. STERNHILL, M.D., *Chairman*

SUBCOMMITTEE ON PREPAYMENT MEDICAL CARE

During the past year the Subcommittee on Prepayment Medical Care has been concerned primarily with the subject of "utilization." At the 1962 annual meeting, the proposed pilot study for investigating the problem of utilization was referred to the Board of Trustees for evaluation, because of the possible cost involved. The recommendation of the Subcommittee was to evaluate actual practice in representative hospitals selected by the Iowa Medical Society and the Iowa Hospital Association. It was suggested that perhaps cases chosen by a preferred random sampling could be studied by an IHA auditor, for the hospital portion of the charges; and a medical evaluation of the identical cases could be carried out either by a physician paid for his services or through a panel of physicians selected by the Society. It was felt that if a panel were chosen, not fewer than two doctors from an unassociated community or area should carry out the medical portion of the study jointly. The combined facts of the study would be reported, without identification, to the Board of Trustees of the Iowa Medical Society and to the Board of Trustees of the Iowa Hospital Association, for their recommendations.

The Board of Trustees suggested that perhaps a more feasible method of carrying out the intent of the program would be to encourage all hospital staffs to appoint committees to conduct utilization studies on a local basis. The Subcommittee reconsidered the matter, but still felt that the program it had originally proposed should be implemented in order to determine and establish the need for local hospital utilization committees.

Further, it was the recommendation of the Subcommittee that the already-established joint committee of the IMS and IHA should be charged with the responsibility of implementing a pilot study. The Executive Council did not approve this recommendation, but requested the Subcommittee to determine how many hospitals have already established utilization committees—obtaining information from them and reporting back to the Executive Council at a future meeting.

Letters have been sent to the chiefs of staff of Iowa hospitals, and as of the time this report is written, of the 112 hospitals reporting, 10 have already organized utilization committees. Letters have now been sent to the hospitals with existing utilization committees to determine the exact organization of the committees and the scope of their activities.

The Subcommittee also considered the Pocahontas County Medical Society's resolution on the Individual Responsibility Plan. This resolution proposes the implementation of the principle of individual responsibility in governmental and private health-care pro-

grams. Since Dr. John M. Rhodes presented this plan to the Subcommittee, the resolution has been restudied by the Pocahontas County Society and has been resubmitted. In connection with this Individual Responsibility Plan, the Committee has received communications from the Health Insurance Council indicating that it is very much concerned about this plan because of the insurance report forms that are involved. The Health Insurance Council requests to be heard if further study of the Individual Responsibility Plan is made.

GEORGE G. YOUNG, M.D., *Chairman*

COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

On direction of the Iowa Medical Society's House of Delegates, a subcommittee of the Committee on Medical Education and Hospitals met on different occasions during the summer with representatives of the State University of Iowa College of Medicine, as well as the Iowa State Board of Regents, to review the necessity and importance of appointing a dean of the College of Medicine at an early date, following the resignation of Norman B. Nelson, M.D., which was effective June 30, 1962.

The Subcommittee was impressed with these meetings, and they provided opportunity to discuss problems and projects of mutual interest, including the very important matter of the selection of a successor to Dr. Nelson. The Committee heartily commends the appointment of Robert C. Hardin, M.D., as dean of the SUI College of Medicine, and offers its cooperation to him in the performance of his duties.

After assuming his new position, Dean Hardin met informally with officials of the IMS to review present and anticipated activities of the College of Medicine, and he was told of the Society's desire to cooperate in the sponsorship of postgraduate programs for the physicians of Iowa. On February 16, 1963, the Committee on Medical Education and Hospitals will meet with the dean to discuss continuing medical education, as well as other items involving the relationship between the Society and the College of Medicine. A supplemental report on this conference will be presented to the House of Delegates in April.

On recommendation of the Committee, the Executive Council instructed IMS delegates to the 1962 AMA Clinical Session to support resolutions recommending an equitable representation of physicians in private practice and medical educators on the AMA Council on Medical Education and Hospitals, in an effort to assure physicians not in academic medicine a more powerful voice in establishing policies and programs. This recommendation was formulated by the Committee because it feels the AMA Council has not clearly reflected the current problems in medical education and patient care.

Following the AMA Clinical Session, Dr. Howard G. Ellis, who represented the Committee at hearings on this matter, presented to the IMS Executive Council a review of actions taken by the AMA House of Delegates. The Council referred his report to the IMS Committee on Medical Education and Hospitals for study and recommendation to the House of Delegates. The Committee will report to the House in April.

The Committee is continuing its activities designed to encourage young high school students to enter the

medical profession, and many county medical societies are supplementing its efforts by promoting the formation of Future Doctors Clubs in local high schools throughout the state. In November, a letter was mailed to all county medical societies urging physicians to assist in the establishment of Future Doctors Clubs, to participate in Annual Careers Day Programs sponsored by the schools, and to visit individually with prospective medical students. In addition, all school superintendents in the state have been informed of the Society's interest and support of this project, and of the availability of films and informational literature on medical careers.

As a member of the Iowa Interprofessional Association, the IMS cooperated with that organization in the development of an exhibit on health careers which was displayed at the Iowa State Fair in August and at the Iowa State Education Association's convention in October.

R. N. LARIMER, M.D., *Chairman*

COMMITTEE ON PUBLIC HEALTH

No meeting of this Committee was held during the year because no matters requiring full Committee attendance were referred.

A member of the Committee represented the Society at the Iowa Tuberculosis Eradication Movement (ITEM) meeting September 27-28, and at the Iowa Welfare Association's annual meeting November 7-9.

No projects were undertaken because of an anticipated change in the structure of this and related committees.

C. P. HAWKINS, M.D., *Chairman*

PUBLIC RELATIONS COMMITTEE

The Public Relations Committee has continued to implement programs designed to strengthen relations with the public and the press. In addition to acknowledging individual requests for information and assistance from lay persons, civic organizations and the press, various projects and activities have been conducted by, or on recommendation of the Committee, and can be summarized as follows:

1. The P/R Committee has worked closely with the Legislative Committee in disseminating information to the public and the profession regarding medicine's opposition to the financing of health care for the aged under the Social Security system. In May, a statewide newspaper advertising campaign was conducted by the IMS and constituent county societies to counteract the effect of a national television appeal that was being made by the administration for public support of King-Anderson legislation. The IMS sponsored a full-page advertisement in the DES MOINES SUNDAY REGISTER on May 20, and 26 county medical societies published a total of 37 ads in daily newspapers throughout the state. In addition, the Health Insurance Association of America and the Iowa Pharmaceutical Association sponsored the advertisement developed by the IMS in Des Moines papers, and the IPHA mailed poster reproductions of the ad to 900 pharmacists in Iowa for display purposes. Spot announcements regarding King-Anderson and Kerr-Mills legislation were telecast over television stations in Des Moines, Waterloo, Cedar Rapids and Ottumwa in conjunction with the newspaper-ad campaign.

2. At the 1961 Interim Session of the AMA, the IMS introduced a resolution recommending the implementation of a national public-information campaign to improve the image of American medicine, a campaign to be financed by voluntary contributions from physicians, and guided by professional public-information experts. The resolution was referred to the Communications Committee, a special study committee of the AMA House of Delegates, which subsequently met with representatives of the IMS to review the history and intent of the Iowa resolution. At the June, 1962, Annual Meeting of the AMA, the following report from the Communications Committee regarding the Iowa resolution was approved by the House of Delegates:

"... while such a program would be beneficial, the Committee does not believe sufficient voluntary contributions would be forthcoming to finance such a campaign on a continued basis, and, after studying all aspects of the Association's present informational program, your Committee believes that this resolution, to a large extent, is being implemented. The Committee wishes to commend the Iowa Medical Society for the leadership it has displayed by endorsing a national public information campaign."

3. The IMS Public Relations Committee is currently developing plans for a state conference on medical quackery, which it hopes can be presented in cooperation with the other health professions. It is anticipated that the conference will be held in the fall of 1963, and that representatives of civic groups, law enforcement agencies, schools, etc. will be invited to attend.

4. A second series of newspaper advertisements developed by the AMA was transmitted by the Committee to all county medical societies in late November, along with a list of suggestions for maximum utilization and effectiveness. Several county societies have indicated that they will sponsor this series in local newspapers, and it is hoped that others will do likewise. The Committee also encourages the use of a series of newspaper ads developed by the Society, titled "In the Public Interest." Copies of both the IMS and AMA ad series can be obtained from the State Society office.

5. The Fall Conference for County Medical Society Officers and Other Representatives was held in Des Moines on October 5. The program was devoted primarily to legislative, public relations and medical service activities. Representatives of four county medical societies reported on successful public relations projects implemented locally, and other county societies were urged to follow suit. The projects discussed were: polio inoculation campaign (Cerro Gordo County); public health forums (Polk County Medical Society); medical careers project (Linn County Medical Society); sponsorship of the "In the Public Interest" ad series in local newspapers (Wayne County Medical Society).

6. The Hawkeye Science Fair, sponsored by the Iowa Medical Society, Drake University and DES MOINES REGISTER AND TRIBUNE continues to grow each year, and in 1962 over 320 junior and senior high school students displayed scientific exhibits. The Fifth Hawkeye Science Fair will be held at the Veterans Memorial Auditorium, in Des Moines, April 5-6, 1963. In addition to sponsoring the Hawkeye Science Fair in Des Moines, the Society also contributed awards for presentation to winning exhibitors at the Eastern Iowa Science Fair

(Cedar Rapids) and Northeast Iowa Science Fair (Cedar Falls).

7. Plans for the 1963 Annual Senior Day, arranged by the P/R Committee for senior medical students and their wives, are currently being developed. The 1962 program was held in Iowa City on May 26.

8. Reprints of the "In the Public Interest" section of the IMS JOURNAL (green sheet) continue to be mailed each month to all Iowa legislators and news outlets. The articles explain the IMS position on each of various legislative issues, and review the public-service projects of the Society.

9. In September, 1961, the IMS was invited by the Iowa Electric Light and Power Company to develop a series of 12 five-minute interviews on Society projects and activities for presentation in connection with a film series titled "Medicine in the Sixties," which the company sponsors monthly over WMT-TV, Cedar Rapids. The first series of programs was completed in August, and when another series of 12 programs began in September, 1962, the Society was again asked for physicians to take part in brief interviews. Currently, general health subjects are being discussed. In addition to the WMT-TV series, the Iowa Electric Light and Power Company is also sponsoring the "Medicine in the Sixties" series over WOI-TV, Ames, on a monthly basis, and the Society is also presenting brief interviews concerning its various public service projects over that station. The WOI-TV series was initiated on September 24, 1962, and will continue through August, 1963.

10. On recommendation of the Committee, the Committee on Health Education is currently cooperating with Radio Station WOI, Ames, in the production of two health-education programs in which Society representatives discuss general health subjects.

11. Contacts have been made with representatives of the various communications media to encourage proper identification of the profession whenever an individual is identified as "doctor" in a news story.

12. Constant liaison is maintained with Iowa news outlets. Wide coverage (newspaper, radio and TV) was received throughout the state on last year's IMS annual meeting, and press releases were distributed to all daily and weekly newspapers. In addition, information on various Society activities and policies is provided to the communications media throughout the year.

13. Representatives of the P/R Committee attended the AMA Institute in Chicago, August 29-31. The Institute focused on public relations in the medical profession, and a report of the meeting was published in the October, 1962 issue of the IMS JOURNAL.

As in the past, the IMS Field Secretaries visit continually with county medical society officers and public relations chairmen regarding various projects that can be carried out at the local level. The Committee encourages local participation in as many public service projects as possible, and will cooperate with county medical societies in their development and implementation.

JOHN G. THOMSEN, M.D., *Chairman*

COMMITTEE ON INTERPROFESSIONAL ACTIVITIES

The major responsibility of the Committee on Inter-professional Activities during the past year has been

to cooperate with the Iowa Interprofessional Association in helping to carry out its various programs. The members of the IIA are: Iowa Medical Society, Iowa Dental Association, Iowa Pharmaceutical Association, Iowa Nurses' Association, Iowa Veterinary Medical Association, and Iowa Hospital Association.

The IIA continues to encourage the formation of interprofessional associations at the local level. Three counties—Scott, Lee and Montgomery—have established county organizations, and several others have held informal meetings to discuss this activity.

An exhibit on health careers, developed by the IIA two years ago, was displayed at the Iowa State Fair in August, and at the Iowa State Education Association's convention in October. The exhibit got very favorable responses, and thousands of informational brochures on careers in medicine, dentistry, hospital administration, veterinary medicine, nursing and pharmacy were distributed. In addition, at the time of the State Fair, each member organization contributed \$25 toward a \$150 scholarship prize for a student indicating plans to enter one of the health professions. The name of the winning student, who entered the Mercy Hospital (Des Moines) School of Nursing in the fall, was drawn at the IIA Annual Meeting in September.

On June 30, the IIA sponsored a dinner for members of the 1963 General Assembly, and approximately 150 legislators were in attendance. Representatives of the member organizations served as hosts, and the president of the Association stressed the need for an adequate appropriation to implement the MAA (Kerr-Mills) program in Iowa.

The IIA continues to cooperate with the State Department of Health and State Office of Civil Defense in civil defense and disaster planning. Several years ago, the IIA appointed civil defense and disaster planning committees in each county in Iowa. A physician was named by the IIA to serve as chairman, and each committee also includes representatives of the other member groups. During the past summer, the committee lists were up-dated, and copies were provided to the Office of Civil Defense, which will maintain close liaison with the county committees. One of the important responsibilities of the committees will be to coordinate the Medical Self-Help Training program at the local level.

The Executive Council of the IIA discussed the possibility of sponsoring a statewide conference on medical quackery, and although no definitive action was taken, this project is to be considered at a future meeting. The Public Relations Committee of the IMS has approved Society sponsorship of a statewide meeting on this subject, and will confer with the IIA regarding a cooperative program.

On recommendation of the Judicial Council, the Subcommittee on Interprofessional Activities, including the Chairman of the Public Relations Committee, plans to meet with representatives of the Iowa Pharmaceutical Association to discuss possible revisions in the "Physician-Pharmacist Code of Understanding." This Code was developed cooperatively by the Society's Interprofessional Activities Committee and a similar committee of the IPhA in 1959, and was approved by the IMS House of Delegates on April 22, 1959, and by the Executive Committee of the IPhA on February 18, 1959. The Code was distributed to all members of the respective organizations.

FLOYD M. BURGESSON, M.D., *Chairman*

COMMITTEE ON HEALTH EDUCATION

On recommendation of the Public Relations Committee, the Health Education Committee is currently cooperating with Radio Station WOI, Ames, in developing interviews and securing guest physicians to appear on a weekly program titled "Sixty-Plus." The programs are prerecorded at the Ames studio, and broadcast over approximately 14 stations in a four-state area. "Sixty-Plus" is devoted to the presentation of news and information of special interest to Iowa's 350,000 retirees. A five-minute interview with a Society representative is included each week, during which the various health problems of older people are discussed. Interview topics include arthritis and rheumatism, thyroid diseases, nutrition, heart disease, respiratory infections, exercise, mental health, etc.

Beginning on March 6, the Society will also cooperate in the production of another series of programs over WOI titled "House Call." These will be 25-minute weekly features in each of which a guest physician will discuss a predetermined and pre-publicized topic, as well as answer questions mailed to the station in advance of the program, and inquiries telephoned to the station during the broadcast period.

The chairman of the Committee, who represented the Society on a television program telecast over WMT-TV, Waterloo, on June 15, reviewed activities in connection with health education. The interview was presented in conjunction with the "Medicine in the Sixties" film series, a monthly feature. A similar interview will be telecast over WOI-TV, Ames, which is also telecasting this series of programs. For the past five months over WMT-TV, interviews with Society representatives have concerned general health problems, and these will continue for at least eight more programs.

The Committee encourages county medical societies to cooperate with local radio and television stations in the production of medical programs, and will be happy to assist in the development of a program series.

"Medical Diary" films on various health topics, produced by the IMS, are still available, and have been lent to many lay organizations throughout the state. AMA films can also be secured through the Society office for showings to both professional and lay groups in Iowa.

Both professional and lay organizations have utilized the services of the IMS Speakers Bureau to obtain guest physician speakers. During the past year, over 20 speakers have been secured by the Bureau to address various county medical society and civic meetings. At the recommendation of the Society's Chiropractic Committee, the Speakers Bureau encouraged each county medical society president and secretary to schedule a talk by a Society representative on legislative and other matters of public interest pertaining to the practice of chiropractic in the State of Iowa. Several county societies have already made arrangements to secure such speakers through the Bureau, and it is hoped that many more will do so.

WALLACES' FARMER continues to publish the "Iowa M.D.'s Say" column, which is presented as a public service by the Health Education Committee, and which provides general information on a variety of health subjects.

As it has done in the past years, the Committee cooperated with the State Department of Health in

securing speakers and consultants for School Health Education Workshops which were held at the State College of Iowa, June 18-29, 1962, and at Drake University, July 23-August 3, 1962. Furthermore, the Society contributed a scholarship which enabled a teacher to attend one of these workshops. The chairman of the Committee participated in the Cedar Falls session, and believes that these courses serve a worthwhile purpose. The Committee is now in the process of securing a consultant from the AMA for the 1963 Workshop to be held at Drake University on July 8-19. It is hoped that local city health agencies will also sponsor scholarships in their respective areas.

The 14th Health Education Workshop was held at Iowa State University, Ames, June 28-29, 1962, and the IMS cooperated with the State Department of Health and other agencies in developing and publicizing the program. These workshops are conducted for health chairmen and personnel from various lay and health organizations in the state. The theme of the program was "Leadership with a Purpose—Health." Representatives of the IMS were present, and members of the Woman's Auxiliary were in attendance also.

The Committee was represented at an Interagency Cooperation Conference, sponsored by the State Department of Health, at Clear Lake on July 18-19. Representatives from 12 health organizations in the state were in attendance. The group considered the establishment of a statewide School-Community Health Council, development of an Interagency School Health Newsletter and other pertinent matters.

The Health Education Committee will continue its projects designed to educate the public on matters of health, and will cooperate with county medical societies and the various health agencies in developing and sponsoring educational programs "in the public interest."

CRAIG D. ELLYSON, M.D., *Chairman*

Reports of Special Committees

COMMITTEE ON INDUSTRIAL HEALTH

The Committee on Industrial Health has not held a meeting during the past year. Copies of all correspondence of particular interest have been distributed to the Committee members for their information and study. Also distributed to them was a report, prepared by the chairman, concerning the meeting of the AMA Council on Occupational Health with chairmen of occupational health committees of state medical societies, which was held on October 1, in Boston, Massachusetts.

No problems have been presented that would necessitate a meeting of the Committee.

C. H. JOHNSTON, M.D., *Chairman*

COMMITTEE ON MENTAL HEALTH

The Mental Health Committee, at its meeting during the year, directed its efforts at the interpretation and clarification of objectives set out at the AMA's first Mental Health Congress, held in Chicago in October, 1962. Several of the members had attended this Congress, and four of them had been on the steering committee for that meeting.

In general, the members of the Committee have approved the program outlined by the Joint Commission for Mental Health. It is felt that the program in Iowa has advanced as far as those of many other states (see the report in the March, 1963, JOURNAL OF THE IOWA MEDICAL SOCIETY), and that the full program that has been recommended is not necessary for this state. In addition, there were exceptions taken to some of the recommendations.

At the most recent meeting of the Committee, action was taken to advise the Legislative Committee on the various legislative recommendations made by the Governor's Commission on Mental Health. Some 26 recommendations were acted upon, the greater portion of them favorably.

The Committee has worked closely with the Iowa District Branch of the American Psychiatric Association, and there has been complete coordination on the part of the membership of both the Committee and the organization to assert leadership in the mental health program for the State of Iowa.

PAUL KERSTEN, M.D., *Chairman*

RURAL HEALTH COMMITTEE

Three members of the Rural Health Committee met in Ames, on February 6, 1963, with staff members of the Cooperative Extension Service in Agriculture and Home Economics. The physicians present were: J. W. Gauger, M.D., Early; R. E. Clark, M.D., Manchester; and Allan Felter, M.D., Van Meter. Marvin Anderson, Ph.D., Mr. C. J. Gauger and Miss Louise Rosenfeld represented the Extension Division.

The Iowa Medical Society's Rural Health Committee conducted statewide annual conferences several years ago, but discovered that the attendance wasn't commensurate with the uniform excellence of the presentations, and that most of the people attending were professionals in the health and social work fields, rather than the housewives, young people, farmers, and businessmen whom the Committee would like most to reach. For these reasons, the Committee approached the Extension Service in an effort to assist that agency, wherever possible, in its 4-H Club, farm women's organization and other efforts aimed at the grass roots.

The Committee's initial efforts at cooperation with the Extension Division have been quite productive. During the past year two physicians appeared at the 4-H Leadership Camp, near Boone, to talk about the need for tetanus immunization, the Committee helped get materials for the Extension Division to use in teaching young people the fundamentals of human growth patterns, and the Committee has arranged to have a teaching movie on posture made at the State University of Iowa College of Medicine, for use by the Extension Division.

When Mr. Anderson asked the doctors whether they knew of any important health problems in rural areas or small towns with which the Extension Division could help, one of the doctors pointed to the recurring problem of pollution in farm water supplies. To illustrate, he told of some of his recent experiences. In one instance, a young mother phoned him to ask what she could do for her youngest child, a 10-month-old infant who had diarrhea. She didn't have a car at the time she called, so she couldn't bring the youngster to town, and the situation seemed not to be an emer-

gency, so the doctor suggested that she administer a diarrhea remedy and bring the infant to his office on the next day. When the mother called the following morning, the child was dead. The autopsy revealed nothing on gross examination, but a culture subsequently grew out *Salmonella* (paratyphoid-B). During the ensuing several days, three more children in the same family became ill, but all of them recovered. When the epidemiologists from the State Department of Health investigated, they found that the water for cooking, drinking and all other purposes in the home came from the cistern, rather than from a well. At the same time a significant fault in the testing of farm water supplies, and of small town ones too, was revealed. It seems that in some instances tests are made only for coliform bacilli, and the *Salmonella* can thus be missed.

In the subsequent discussion, it was brought out that several factors may be aggravating the pollution of the farm water supplies. Because many farmers are feeding far larger numbers of livestock than they used to do, there is an increased pollution of surface water, and also in some cases, electrical equipment is pumping dangerously large amounts of water from shallow wells. Mr. Anderson says that his staff includes an engineer whose special interests are water supply and drainage, and he intends asking him to find out how widespread these difficulties are, and what the Extension Division can do in warning people about them. The comment was made that these problems are especially severe in areas surrounding our larger towns. Because of what has been referred to as "the urban sprawl," physicians, Extension Division staff members and everyone whom they can influence should talk to the county commissioners about the necessity of enacting zoning ordinances for suburban districts.

Miss Rosenfeld requested materials from the Iowa Medical Society to back up the contention that obesity is a threat to health.

Mr. Gauger asked additional help from the Medical Society, and from individual doctors at the local level, for the health aspects of 4-H Club programs. By way of background, he said that current 4-H Club membership in Iowa totals 54,000, and is equally divided between boys and girls. The various clubs conduct projects and encourage individual research in the fields of citizenship, health, personal appearance (grooming), and career exploration. In each community, the help of doctors is needed first in planning and afterward in leading activities in the health field. The Extension Division conducts a "health camp" annually for the boys and girls who are especially interested in that area of 4-H activities, and there is need for physicians to address those campers. He concluded his remarks by saying that in 4-H Club work the Extension Division wants to get away from mass health examinations, and into true educational work in the health field.

Members of the IMS Rural Health Committee said that they would be glad to encourage doctors in the various communities to interest themselves in 4-H Club work, but that for various reasons it is advisable for the Extension Division staff members at the local level to arrange for physician cooperation through the various county medical societies. The IMS headquarters office will provide Mr. Anderson and his staff with a list showing the names of the IMS Rural Health Committee members and the district which each of

them represents. The Extension Division field men will thus be able also to seek help from nearby Committee members in securing local physician cooperation.

Miss Rosenfeld said that she could provide numerous "success stories"—accounts of work that doctors throughout the state have already done with 4-H Clubs. It was suggested that she write these out for publication in the *JOURNAL OF THE IOWA MEDICAL SOCIETY*.

It was reported that Dr. C. B. Larson, head of orthopedic surgery at the State University of Iowa, will need more money than the College of Medicine can provide for making the teaching film on posture. Mr. Anderson and Mr. Gauger remarked that if the film is to be both in color and sound, and is to run 10 or 15 minutes, it may very well cost \$2,000 or more. Dr. Larson is to inform Dr. Anderson of his needs as regards money, and Dr. Anderson has reiterated his willingness and his agency's ability to supplement the SUI funds for this project.

In discussing this topic, Dr. Anderson mentioned incidentally that Iowa State University and the State University of Iowa are to begin cooperating shortly on numerous aspects of extension work.

In this connection, there was some discussion of the long-proposed study designed to show what a town must possess or must do to get and keep doctors. It was mentioned that USPHS seems still to be interested in financing it, but that the SUI professor who was to have directed it has left the state. Dr. Anderson and his colleagues expressed interest in the project, and said they might ask that it be undertaken when ISU-SUI cooperation starts in earnest.

The Extension Division staff seemed highly pleased with the leaflet urging tetanus immunization which the IMS Rural Health Committee has made available, and asked that 1,000 copies be sent to Ames for distribution by county agents' offices throughout the state. The Rural Health Committee was asked also for similar materials with which to promote smallpox immunization. The AMA has asked all agencies with an interest in health to join in that effort. The Committee agreed to investigate the possibility of printing and distributing such a pamphlet.

The Extension Division staff was also enthusiastic about the potential of the individual and family health-record cards which have been exhibited at the AMA conferences on rural health. The IMS Rural Health Committee agreed to provide the individual health record cards to the Extension Division in quantity, for its work with 4-H Clubs and farm women's groups, and to see what it can do about providing family health-record cards.

J. W. GAUGER, M.D., *Chairman*

PHYSICIAN DISTRIBUTION COMMITTEE

No problems were referred to our Committee during 1962.

ROBERT E. GRIFFIN, M.D., *Chairman*

PRECEPTORSHIP COMMITTEE

At a meeting of the Iowa Medical Society Preceptorship Committee on January 15, 1963, Dr. Radcliffe reported that the recruiting of preceptors no longer poses any difficulty at all. Considerable numbers of physicians in solo general practice, and several groups consisting entirely of general practitioners, have expressed their willingness to take several preceptees at

various times throughout the year, and the new schedule at the SUI College of Medicine, under which classes are conducted virtually the year round, allows for preceptorships 12 months a year rather than just three.

The Committee members discussed the possibility that in some situations preceptees may get better training than in others. It was agreed that, generally speaking, students should be placed with solo general practitioners or general practice groups, rather than with clinic groups made up of several specialists and, perhaps, a single general practitioner. Dr. Radcliffe reported that this type of selection is being done, and that there seemed to be enough preceptors or preceptor groups of the preferred type.

The possibility of an intensive study of the preceptorship program and of its results was discussed, as it had been at Preceptorship Committee meetings in former years. Such an investigation might reveal (1) whether the Iowa preceptorships are attracting young men to enter general practice (and particularly, general practice in Iowa); (2) what improvements the preceptors and preceptees can suggest; and (3) whether one month is the ideal length of time for a preceptorship. Dr. Radcliffe reported that the Kellogg Foundation was approached some time ago for funds with which to conduct such a study, but without success. He said that he has been collecting the students' evaluations of the program. Attempts will continue to secure a grant to finance a long-range and more thorough-going investigation.

Dr. Radcliffe reported that some of the faculty members at the SUI College of Medicine believe that preceptorships are of little value to the students who intend becoming specialists, and thus that the preceptorship should be made an elective rather than a requirement for graduation. The IMS Preceptorship Committee then went on record as maintaining emphatically that the preceptorship should continue as a requirement for graduation from the SUI College of Medicine. The Committee requests that the IMS House of Delegates take identical action.

The members of the Committee are in complete agreement that, whether or not a student subsequently enters general practice, the firsthand look that a preceptorship gives him at the general practitioner will be important in maintaining cordial relationships and mutual confidence among the members of the medical profession, and thus will be of great benefit to the public.

There was some discussion, again, about whether preceptors may or should keep students for lengths of time exceeding one month. Some physicians appear anxious to do so, and Dr. Radcliffe said that the College of Medicine has no objections, provided the student's schedule permits. The possibility of dividing a preceptorship so as to give a student two weeks with a general practitioner in the summer and another two weeks with him in the winter was again discussed. This plan is said to provide the student a look at a greater variety of the problems with which general practitioners deal. The principal drawback about this sort of arrangement is that, because of changing circumstances, a student might serve two weeks at one time, and then somehow or other be prevented from serving the final two weeks. A few of these split preceptorships are currently being attempted, reportedly with good results.

Attention was called to a speech by Mr. James A.

Brooks, president of the Student American Medical Association, published on page 807 and 808 of the December, 1962, JOURNAL OF THE IOWA MEDICAL SOCIETY. Mr. Brooks suggested that general practitioners be brought to colleges of medicine on several occasions each year to speak, formally and informally, with students about the attractions and problems of general practice. The Preceptorship Committee members commented that such a plan as that would constitute a multiplying of senior day, and they agreed that it should be tried.

Dr. Radcliffe said that he would continue gathering and editing preceptees' comments and suggestions with regard to the program, and that he would prepare materials for two releases: (1) a semiconfidential report to preceptors, and (2) a report for publication on the "In the Public Interest" page in the JOURNAL.

L. D. CARAWAY, M.D., *Chairman*

REPORT OF BLOOD BANKING COMMITTEE

During the past year the Blood Banking Committee has had only two matters referred to it. The first of these was referred for informational purposes and concerned the payment of processing fees to community blood banks for blood furnished by them to local hospitals. This matter has been referred to a special committee appointed by the president of the Iowa Medical Society, and is under consideration at the present time.

The second matter, referred to the Committee just prior to the submission of this report, concerned a lawsuit over the request of the Blood Service Plan Insurance Company of Phoenix, Arizona, to be allowed to write insurance covering blood in the State of Iowa. The insurance company's request has been refused by the Commissioner of Insurance for the State of Iowa, and the suit is as yet unsettled. The Medical Society has been asked to join with the Iowa Association of Blood Banks to prevent this type of insurance from being issued in this state.

WALLACE RINDSKOPF, M.D., *Chairman*
W. S. PHETEPLACE, M.D., *Co-Chairman*

CHIROPRACTIC COMMITTEE

This Committee did not have a scheduled meeting during the year, but the chairman did meet with Mr. Robert Throckmorton, IMS legal counsel, and with the staff secretary to the Chiropractic Committee in the latter part of August for the purpose of determining the future course and activities to be taken. This meeting was designed as a follow-up for the recommendations presented in the previous report of the Chiropractic Committee to the House of Delegates. Since detailed information could not be included in the report at that time, the recommendations did not receive final approval by the Reference Committee, but were approved in general.

As a result of the August conference, it was decided to present additional information and further detail to the Executive Council of the IMS on November 14, 1962. The report given at the meeting is on file with the IMS, and was essentially the same as last year's Committee report.

Later, the chairman of the Chiropractic Committee was asked to present further views at the meeting of the Public Relations Committee which was held on

January 31, 1963. After hearing the information presented, the Public Relations Committee felt that the Chiropractic Committee should proceed along the lines suggested, but favored first an informational program for the physicians of Iowa. This is to be accomplished through presentations at county medical society meetings by the Chiropractic Committee members and the Speakers Bureau members on the findings, conclusions and recommendations already presented by the Chiropractic Committee.

It was also suggested that an accurate collection of factual information be accumulated and arranged in pamphlet form for use by those vitally interested in this subject. The Chiropractic Committee is to continue the accumulation of information. Some of this gathering is to be done through a questionnaire that is to be sent to each of the county medical societies. Other information and data will soon be furnished to the IMS by the AMA.

The Chiropractic Committee is indebted to Mr. Throckmorton and Mr. Eldon Huston, and these men are to be commended for their help and valuable assistance.

This Committee should continue active, since the IMS must remain on the alert.

RAYMOND A. BERGER, M.D., *Chairman*

MEDICAL ASSISTANTS' ADVISORY COMMITTEE

The annual convention of the Iowa Association of Medical Assistants was held in Waterloo on May 4, 5 and 6, 1962. The annual meeting of the American Association of Medical Assistants was held in Detroit on September 26-30. The 400 medical assistants in attendance represented a majority of the 50 states. Written tests were taken by some of the members as a pilot study for the national certification program which is being instituted.

The Placement Bureau with the Iowa State Employment Service is ready and willing to help in securing employees for medical offices anywhere in the State of Iowa.

The fourth annual In-Service Workshop was held September 23 to 26, 1962, at the Iowa Center for Continuation Study at Iowa City, under the leadership of Dr. William Coder, and 44 medical assistants attended it. Plans are under way for an advanced workshop in 1963 for medical assistants who have attended the basic workshops.

You are invited to visit the booth of the IAMA during the convention of the Iowa Medical Society. Any questions you may have can be taken up with the attendants at the booth.

We consider that this organization is making excellent progress, and again we recommend it as worthy of the support of the members of the Iowa Medical Society.

FLOYD A. SPRINGER, M.D., *Chairman*

COMMITTEE ON SCIENTIFIC EXHIBITS

The Scientific Exhibit Section at the 1962 annual meeting consisted of 42 exhibits, which utilized 3,360 square feet of floor space. These figures indicate the magnitude of the Section, but they can't reflect the time and effort expended in the preparation of the many fine exhibits. The Committee extends its sincere

thanks to the exhibitors for their participation in the 1962 display.

As this report is written, details are being worked out for the 1963 Scientific Exhibit Section. Since the annual meeting is to be held at the Hotel Fort Des Moines, scientific exhibit space will be limited. The Committee has therefore restricted the Section to only those exhibits that are truly scientific in nature. Applications on hand at this time indicate that the Section will contain many exhibits of excellent quality. It is hoped that all officers, delegates and members of the Society will visit the displays. Each physician will find he is well rewarded for the time spent in reviewing the booths, and the exhibitors will be rewarded by the interest shown in their contributions.

JAMES T. McMILLAN, M.D., *Chairman*

RELATIVE VALUE STUDY COMMITTEE

On September 27 and 28, 1962, each member of the Iowa Medical Society was mailed a copy of the Iowa Relative Value Index which had been approved by the Iowa Medical Society House of Delegates in May, 1962.

We acknowledge and thank the California Medical Association for many of the features and for the format used by the Committee in formulating the new Index.

The values in the Index are based on the results of a survey conducted in 1961. In addition, all groups and parties concerned were consulted. We recognize that there may well be a need to revise the Index in the future, and the Committee will continue to gather pertinent information for such a revision. The Committee will be glad to hear from anyone who has suggestions for its consideration.

FRED STERNAGEL, M.D., *Chairman*

COMMITTEE ON AUTOMOTIVE SAFETY

The Iowa Medical Society, through its Committee on Automotive Safety, has continued to cooperate with the Cornell University Automotive Crash Injury Research Division in conducting a survey to determine causes of injuries and deaths to occupants of late-model passenger cars involved in accidents. The Iowa-Cornell Study was initiated on February 1, 1962, and will be concluded on February 1, 1964.

Physicians in 31 southwestern counties participated in the first six-months survey; physicians in 21 north-eastern counties participated in the second six-months survey; and physicians in 21 northwestern counties are currently participating in the third six-months survey. The other cooperating agencies are the State Department of Health, the Iowa Hospital Association, and the Iowa Highway Patrol.

The chairman has met on several occasions with Cornell University field representatives during the past year, and following is a brief summary report of the first six-months survey period, February 1, 1962 to July 1, 1962:

Number of accidents	174
Number of cases	239
Number of injured or killed	381
Number of doctors reporting	50
Number of hospitals reporting	50

The data gathered is too small a representation to produce any findings at this time, but a detailed analysis will be provided at the conclusion of the survey.

The chairman is pleased to report that physicians throughout the state have been most cooperative in participating in this important project.

The Legislative Committee has been informed of Committee's recommendations regarding support of the implied-consent bill, and of legislation to make the installation and use of seat belts compulsory in all automobiles.

The Commissioner of Public Safety for the State of Iowa, Mr. Carl Pesch, appointed your chairman to serve on the Commissioner's Coordinating Committee for Traffic Safety.

Although this group has met only once since its inception, the Commissioner plans to re-activate it at an early date to consider matters of pertinent interest. The Committee has maintained close liaison with Commissioner Pesch, and will continue to work with him on problems of mutual concern and in the public interest. In this respect, the committee will explore the feasibility of developing specific recommendations regarding minimum physical standards for motor vehicle operators.

The chairman represented the Society on a program telecast over WOI-TV, Ames, on November 8, and reviewed activities in connection with automotive safety. Copies of an AMA pamphlet titled "Are You Fit to Drive?" were offered to the viewing audience, on request. A similar interview was presented over WMT-TV, Cedar Rapids, a year ago.

The Society continues to secure films on automotive safety for use by schools throughout the state, and showings of over 25 films were arranged during the past nine months.

On November 8, the chairman represented the Society at a meeting in Des Moines which was held to consider the formation of a statewide safety committee to promote periodic motor vehicle inspections in Iowa. The meeting was sponsored by the Iowa Automotive Wholesalers Association, and representatives from various professional and lay organizations were in attendance. At the meeting, Commissioner Pesch and Colonel David Herrick, of the Iowa Highway Safety Patrol, indicated their support of a citizens' group effort to obtain a sound, workable law for periodic motor vehicle inspections in Iowa. No official or definitive action was taken at this informational meeting.

A. H. DOWNING, M.D., *Chairman*

OSTEOPATHIC COMMITTEE AND MD/DO LIAISON COMMITTEE

The Osteopathic Committee, representing all areas of the state, has continued to function as the advisory group to the smaller MD/DO Liaison Committee. The five members of the M.D. section of the MD/DO Liaison Committee met with a like group from the Iowa Society of Osteopathic Physicians and Surgeons to discuss areas of mutual interest. Your Committees feel that this dual committee arrangement is an excellent one, and recommend that it be continued.

Because of the close relationship between the two Committees, a joint report is being submitted.

During the past year, two main areas have been considered by the Committees. The subjects under discussion have required a number of long and detailed meetings. The parent Osteopathic Committee has met formally on six occasions, including its meetings with the Board of Medical Examiners. In addition, the joint MD/DO Liaison Committee has also met on six occasions.

The 1962 House of Delegates adopted an evaluation program whereby osteopathic physicians and surgeons could submit applications for evaluation by county medical societies. If a favorable report were received, the applicant, by action of the IMS Judicial Council would be placed on a roll of osteopathic physicians and surgeons with whom it will not be considered unethical for doctors of medicine to associate professionally. The program has been carried forward, and 108 applications representing osteopathic physicians and surgeons in 34 Iowa counties have been submitted. The following is a status report on these applications as of February 20, 1963:

Approved by the IMS Judicial Council—21 osteopathic physicians and surgeons;

Approved by the respective county medical societies, but not yet considered by the Judicial Council—12 osteopathic physicians and surgeons;

Ninety-day extensions for consideration by the respective county medical societies—37 osteopathic physicians and surgeons;

Disapproved by the respective county medical societies, but no action taken by MD/DO Liaison Committee or Judicial Council—12 osteopathic physicians and surgeons;

No action by respective county medical societies—25 osteopathic physicians and surgeons;

Disapproved by the Judicial Council—1.

The following osteopathic physicians and surgeons have been placed on the list of osteopathic physicians and surgeons with whom it will not be considered unethical for doctors of medicine to associate professionally:

<i>Name</i>	<i>County</i>	<i>Town</i>
J. E. Ankeny, D.O.	Audubon	Exira
C. L. Updegraff, Jr., D.O.	Boone	Boone
R. W. Jack, D.O.	Boone	Ogden
R. E. Vermillion, D.O.	Boone	Ogden
W. G. Nelson, D.O.	Fremont	Sidney
L. D. Barry, D.O.	Hamilton	Williams
M. L. Hodson, D.O.	Hamilton	Jewell
S. I. Kurumoto, D.O.	Hamilton	Webster City
D. V. Mullin, D.O.	Hamilton	Ellsworth
R. F. Snyder, D.O.	Kossuth	Swea City
H. M. Perryman, D.O.	Marion	Pleasantville
M. N. Bos, D.O.	Monroe	Albia
G. A. Whetstine, D.O.	Muscatine	Wilton Junction
H. L. Gulden, D.O.	Story	Ames
C. L. Hall, D.O.	Story	Zearing
R. W. Larson, D.O.	Story	Roland
E. S. Honsinger, D.O.	Story	Ames
H. D. Meyer, D.O.	Story	Nevada
C. E. Semler, D.O.	Story	Story City
G. K. Howland, D.O.	Taylor	Lenox
R. W. Gustafson, D.O.	Van Buren	Stockport

A more up-to-date report on the progress of the evaluation program will be presented to the House of Delegates as a supplemental report.

A second major item of discussion was legislative action to consolidate the Board of Medical Examiners and Board of Osteopathic Examiners into one Board of Medical Examiners. Several meetings were held between the MD/DO Liaison Committee, the Board of Medical Examiners, the Committee on Legislation and the Osteopathic Committee in order to assure that any recommended composite board legislation would be in the best interests of all parties concerned.

The results of many hours of consideration culminated in recommendations from the Osteopathic Committee and the Committee on Legislation that the IMS support a Composite Board Bill in the 60th Iowa General Assembly. The Executive Council approved the recommendation on January 16, 1963.

A bill, Senate File 194, has been introduced which calls for a Board composed of five medical doctors and one osteopathic physician and surgeon. Under this legislation, the new Board will be responsible for licensing all osteopathic physicians, osteopathic physicians and surgeons, and doctors of medicine. The present Osteopathic Practice Act will be amended to exclude those fully licensed as osteopathic physicians and surgeons, and a new chapter will be written in the Code spelling out the requirements for licensure and the scope of practice for osteopathic physicians and surgeons. The osteopathic physicians and surgeons will have the same practice rights as doctors of medicine, but those licensed as osteopathic physicians will remain in their present status, with no loss or gain in rights and privileges. There are approximately 450 osteopaths licensed in Iowa, and of this number, approximately 175 hold the full license of osteopathic physician and surgeon.

Under the Composite Board Bill, all future graduates of approved colleges of osteopathic medicine and surgery will be licensed as osteopathic physicians and surgeons, and no new osteopathic physicians will be granted licenses except by reciprocity from another state (at the discretion of the Board of Medical Examiners). From the date of the enactment of this legislation, graduates of colleges of osteopathic medicine and surgery will be required to take the same examination and meet the same basic requirements as graduates of medical colleges. The disciplinary and enforcement provisions of the present medical practice act will be extended to osteopathic physicians and osteopathic physicians and surgeons, under the bill. Also, the Board of Medical Examiners will be empowered to approve osteopathic colleges and internships.

Through correspondence with 16 other states where composite boards are in operation, it has been determined that almost without exception these states are well pleased with the composite board and with its jurisdiction over those licensed to practice osteopathy, osteopathic medicine and surgery, and medicine. This has been an important factor in our recommending a composite board for the State of Iowa.

At the present time, it appears that the composite board will be favorably considered by the 60th General Assembly. More information will be available by the convening of the House of Delegates in April, 1963.

J. M. RHODES, M.D., *Chairman*

COMMITTEE ON NATIONAL EMERGENCY MEDICAL SERVICE

During the year 1962, the major effort of the Committee on National Emergency Medical Service centered around the promotion of the Medical Self-Help Training Program, which was inaugurated by the joint efforts of the American Medical Association, the United States Public Health Service, and the Office of Civil Defense.

The Committee has given whole-hearted cooperation to the Iowa State Department of Health in the promulgation of the Medical Self-Help Program in Iowa. During the past year, a total of 123 classes were completed,

and there were 2,141 graduates. Twenty-two classes were in progress at the end of the year, and 28 more were in the planning stages.

Your committee chairman participated in two programs to promote the Medical Self-Help Training Program, as well as the cause of emergency medical service. In addition, several papers on emergency medical care have been presented at various county medical society meetings.

On November 3-4, 1962, your committee chairman attended the 13th County Medical Societies Conference on Disaster Medical Care, in Chicago, and papers presented at this meeting have been placed on file in the Medical Society offices. The theme of the conference was "Survival in the Sixties," and speakers emphasized the extreme need for physicians and allied health personnel trained in civil defense and disaster emergency procedures.

The Committee cooperated with the Iowa Interprofessional Association in up-dating the civil defense and disaster committees in each county in Iowa, appointed to work with local civil defense directors. A physician serves as chairman of the committee, in each county, and the membership also includes a dentist, a veterinarian, a pharmacist, a nurse, and a hospital administrator.

The July, 1962, issue of the IMS JOURNAL was largely devoted to the problems of radiation, and consisted of four papers which were presented at a regional conference on Civil Defense and Emergency Medical Service, which was held in Oelwein a year ago. Reprints of the articles were distributed to delegates of the Iowa Interprofessional Association who attended the IIA Annual Meeting in September.

The film on "Disaster Planning," produced by the IMS, continues to be utilized throughout Iowa, and also has been lent to other state medical societies. The film, which depicts the principles of planning for disaster, can be obtained from the office of the Society.

The Committee's exhibit on Emergency Medical Service which was prepared for display at the 1962 Annual Meeting, received considerable comment and interest. The Committee will continue to cooperate with all county medical societies, allied health professions and state agencies, in promoting and developing adequate emergency medical care plans for the State of Iowa.

M. E. ALBERTS, M.D., *Chairman*

ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY

The Advisory Committee to the Woman's Auxiliary is happy to report that the Iowa Auxiliary continues successfully in its cooperation with the Medical Society to strive for betterment of public health.

The Auxiliary has been called upon to assist in various areas of health activities. A few of these have been legislation, AMA-ERF, recruitment in the allied health fields, mental health, rural health and safety programs, as well as other community services.

Interest in Auxiliary projects has increased throughout the state, as indicated by an increase in membership. There are more members-at-large in unorganized counties, and it is hoped they will help to form more organized groups. One new Auxiliary has been formed this year. The Auxiliary has also provided some financial aid to the WA/SAMA (Woman's Auxiliary to the Student American Medical Association), and includes

that group's members on its mailing list for informational materials. In those counties where Auxiliaries are not organized, we sincerely urge the county medical societies to encourage and assist in activating such groups, open only to wives of members in good standing of the medical society or to widows whose husbands were in good standing when they died.

Recognition of the activities of the Iowa Auxiliary at the national level is indicated by the following appointments for 1962-1963: Region 3 Legislative chairman (area), Region 6 Rural Health chairman (area), and North Central Regional Chairman of the International Health Activities Committee.

The Auxiliary's Legislative Committee has worked very closely with and under supervision of the IMS Legislative Committee during the past year. The Auxiliary Legislative Committee chairman attends all meetings of the IMS Committee so she is well informed on this program. Thousands of pamphlets and brochures on the King-Anderson Bill were distributed, and an active "Write Your Congressman" campaign was conducted. Every effort was made to keep the latest correct information flowing to the Auxiliary members so that they would be well and correctly informed on the issue. They also carried on an intensive campaign disseminating information on reasons for implementation of the Kerr-Mills Law in Iowa. An informational sheet "Have You Heard," written by the Woman's Auxiliary Legislative Chairman, is sent to members each month. It is recommended that Auxiliary members maintain a steady, non-partisan interest in local, state and national affairs, demonstrating that they are sincerely concerned over all aspects of public welfare, for then their opinions as citizens will attract greater attention and respect when an issue arises in which they are particularly interested. The doctors' wives can be tremendously proud of their accomplishment in helping to defeat a piece of bad legislation, but they also know that they may be called upon for further efforts in the battle against welfarism and socialization. The techniques and principles learned from the WHAM (Women Help American Medicine) campaign will serve them well as they continue to work for good government.

The Community Service Committee realizes it is important that the doctor be a vital part of his community life. Auxiliary members are valuable in this area because of their contacts with school and church groups and women's clubs. The physician's wife is aware through these contacts of what needs to be done in the community, and we feel she can help her husband to that knowledge and thus help him to do his part. Auxiliary members are urged to read up on medical quackery, and to inform their acquaintances that being victimized by these frauds is not only unnecessary, but expensive and dangerous as well. They are urged to be forthright in exposing fakery—widespread quackery practices which circumvent existing laws. Their joining with other groups in community health work should greatly strengthen our own organizations.

As a part of the Community Service program, the Woman's Auxiliary again sponsors the A.A.P.S. Essay Contest with the consent and assistance of the Iowa Medical Society. The essay contest is an effort to make high school juniors and seniors more thoroughly aware of the advantages of the free enterprise system. The Auxiliary also continues the granting of an annual award to the outstanding lay woman in the volunteer health service field, and this year's presentation will

be made at the Auxiliary's annual meeting. Each county Auxiliary is urged to participate in this activity at the local level, and to present a nomination for the state award.

Another much needed community service is the homemaker service. The Homemaker program which the Polk County Auxiliary helps sponsor is going well, and in two or three other county Auxiliaries, the plan is being studied and community sponsorship is being arranged.

The Auxiliary's Community Service Committee continues its cooperation with the Iowa Society for Crippled Children and Adults, in the sale of articles made by handicapped workers. Six sales were held during the past year by the handicapped craft sales committees of the larger county Auxiliaries. The sales were held as usual in Des Moines, Dubuque, Fort Dodge, Sioux City, Waterloo, and Spencer. The last-named of these was held at the Spencer Fair and was planned and manned by all the Auxiliaries in District III. The Auxiliaries arrange for the sale location, the necessary publicity, and for members to act as saleswomen. With the improvement of merchandise provided, the sales are increasing in popularity, thus affording greater proceeds to go directly to the handicapped person who made the articles.

A physician's wife can do more perhaps than anyone else to combat the deadly apathy which has characterized disaster medical-care preparation. The Civil Defense Committee has urged members to use their influence with school boards and hospitals to set up practical, workable and flexible plans to meet disasters if they should occur.

Rural Health is a relatively new committee of the Auxiliary. It is hoped that Auxiliary members will prompt their husbands to become involved in rural safety programs since statistics show agriculture is the third most dangerous industry in America. This committee urges physicians' wives to become active in the rural safety organizations and to encourage women to become "safety engineers" in their families. We urge recognition in rural areas of the interrelationship between health and safety problems, and to create a consciousness of farm safety measures.

The Auxiliary has carried on an active campaign in the international health field through the program of providing a supply of bandages, drugs, medical books, and instruments for shipment and use in undeveloped countries. Lack of hospitality for foreign visitors who are studying in our medical schools and hospitals is being overcome through the efforts of the Auxiliary. International health activities carry the good will and the name of the Medical Society's Woman's Auxiliary to all parts of the world.

The AMA-ERF Committee is striving to bring up Iowa's ranking as regards participation in this national project. Budget restrictions and limitations hamper medical schools and many medical students faced with financial difficulties in the long preparation for their chosen profession. These problems are alleviated through AMA-ERF. An AMA-ERF regional meeting held in Des Moines was attended by the state Auxiliary president and the AMA-ERF chairman. This committee is making every effort to make moneys available for medical education loans and for the maintenance of an unhampered medical education, so that worthy young people can carry on the high standards of the medical profession and help preserve freedom from federal control in our medical schools and institutions. The

objective: securing funds for medical security.

The Health Careers Committee signifies that as workers for men in medicine, Auxiliary members give much time and effort in attracting students to careers allied to medicine, so that the needed trained personnel will be available. Future Nurse Clubs and Health Careers Clubs in many high schools are sponsored by the Auxiliary. Through follow-ups on graduates, it is found that a high percentage of these club members continue entering the fields of nursing, and medical technology and other professions allied to medicine. Members of the Committee assist in many Career Day activities in the high schools. They realize we cannot for a moment relax our support of medical education and recruitment for health careers.

The Health Educational Loan Fund activity increases each year, as financial requirements for health careers training becomes greater. Students who are borrowing from this fund for health-profession education are studying in all parts of the state. The benefit dance held at the time of the annual meeting each year is a very important project, since it adds measurably to the fund. The entire proceeds from this ticket sale go to H.E.L.F. The Auxiliary members contribute 50c per capita each year toward the fund, and memorials during the year are also a source of income.

The Mental Health Committee has again been active through participation in projects at mental health institutions and in other local areas. The "Milestones to Marriage" letters continue their popularity, and many requests for them have been received this year from school counselors, teachers, youth group workers, doctors and Auxiliary members. This Committee is anxious to assist the IMS in its program in mental health.

The WOMAN'S AUXILIARY NEWS, published each month in the JOURNAL OF THE IOWA MEDICAL SOCIETY, is reprinted and distributed to the members of the Auxiliary throughout the state. The wives of junior and senior medical students also receive copies of this pamphlet each month. Through this publication, the state officers and each committee chairman can reach members with information about their projects and activities. It also serves as a means of disseminating accurate and factual information on various issues as they arise. The numerous requests received from other states and from national officers to be put on the mailing list indicate that the Iowa WOMAN'S AUXILIARY NEWS holds a top spot for this type of publication.

The Auxiliary president participated in the annual Senior Day program at the SUI College of Medicine in May. The Auxiliary has been represented at Health Education Workshops, at the Health Careers Council of Iowa and at interorganizational meetings, as well as the annual United Nations observance and many other interprofessional and civic gatherings.

We are certain of the real worth of the Auxiliary. Through its program, the Auxiliary guides and teaches the individual member to serve her community better, and to reflect and enrich the dedicated service which her physician-husband gives within that community. The Auxiliaries gain an important place in community life through the activities that they carry on. Members are dedicated to the profession of their husbands, and to being helpful and useful in affairs that concern the medical profession.

We urge Auxiliary members to continue their active interest in the issues affecting medicine, to be well read on such subjects, and to continue passing on information to others. Auxiliaries aid in removing bar-

riers in all types of community health work, and must enlist help of other physicians' wives. We are hopeful of the opportunity of showing them the wisdom of uniting to uphold the high standards of their husbands profession.

Enthusiasm for community health projects and willingness to assume responsibility for community tasks are in themselves valuable to medical public relations. The Auxiliary has shown its ability to cooperate, through its representatives on the boards of various organizations and institutions and on the councils of local and state groups. Those representatives have made every effort to see that Auxiliary members are kept well informed and apprised of current problems through attending workshops and conferences.

We are seeking new ways to convince all doctors' wives that *only* by a strong, *united* membership in medical societies and their Auxiliaries can we survive the pressures that are exerted upon the field of medicine. We ask each physician to tell his wife of the importance and indeed the necessity for her participation as an Auxiliary member.

C. V. EDWARDS, SR., *Chairman*

COMMITTEE ON NURSING EDUCATION AND SERVICE

While this Committee has not held formal meetings the past year, members of the Committee have continued interest and effort in studying the problems relating to the nursing shortage and attaining better bedside nursing.

Two members of the Committee have been in attendance at three meetings the past year called by the Interorganizational Committee, which consists of representatives of The Iowa League for Nursing, the Iowa Nurses' Association and the Iowa Medical Society. The purpose of this joint committee concerned with nursing and its education and services is to explore together the trends in nursing and nursing education, and in medicine and medical education, as those trends mutually affect the two professions.

The IMS Nursing Education and Service Committee is also represented at the meetings of the Health Careers Council of Iowa, since that Council is interested in recruitment of nursing students, as well as candidates for other health careers.

It is also represented on the State Advisory Committee for Practical Nurse Education.

The Committee has familiarized itself with the bill presenting a new Nursing Practice Act, which is being studied by the IMS Legislative Committee.

HENNING W. MATHIASSEN, M.D., *Chairman*

HISTORICAL COMMITTEE

The Historical Committee has nothing to report, but urges the historian of each county society to bring the history of his county society up to date and to submit it to the Historical Committee for possible publication.

DENNIS H. KELLY, SR., M.D., *Chairman*

COMMITTEE ON GROUP INSURANCE

The Committee on Group Insurance has continued to serve as liaison between the Society and the organizations administering the IMS-approved group insurance programs. The following is a brief report on the

status of these programs and other items that have been considered by the Committee:

IMS Group Disability Program: Recently the AMA approved a new group disability program, and after studying it thoroughly, the IMS Committee on Group Insurance reaffirms its recommendation of the Iowa program.

The Iowa Program provides lifetime benefits for accident disability and seven years of sickness benefits. This constitutes substantial protection, since statistics show that only a small fraction of one per cent of all disability claims ever extend beyond this seven-year period. The Iowa Plan provides complete flexibility, since it permits members to select the coverage which exactly fits the need.

Under the Iowa Plan (1) coverage from \$25 to \$250 per week is available, (2) length of coverage from five-year accident to lifetime accident and from one-year to seven-year sickness coverage is available, (3) under the Iowa program, a member may select first-day accident and eighth-day sickness coverage, or sickness coverage with waiting periods of four, eight or thirteen weeks, or six months. After considering all points, the Committee on Group Insurance feels that the Iowa Plan is extremely flexible, practical, and offers the IMS members good disability coverage.

Group Life Program: During the past year, an open-enrollment period was held for those members of the Society who were not insured under the Group Life Program. In addition, Bankers Life agreed to offer additional insurance to IMS members who previously were insured for the maximum amount available. Several new physicians enrolled, and also a number applied for the additional unit of insurance.

It had been reported that the administrators of the IMS Group Programs are experiencing difficulty in enrolling new members of the IMS. Because of this fact, the Committee on Group Insurance recommended to the IMS Board of Trustees that a series of fliers outlining the Group Insurance Programs approved by the IMS be sent to all new members in order that they may be apprised of the coverage available through membership in the IMS. The Board of Trustees approved the Committee's recommendation, and the drafting of appropriate fliers is underway.

Group Blue Cross-Blue Shield: The IMS Statewide Group Blue Cross-Blue Shield Program continues to be successful. During the 1962 open enrollment period, an increased coverage from \$20 to \$30 per day for hospital room charges was offered at approximately the same rate that existed prior to this increased coverage. This was possible because of a rate decrease in Blue Shield which offset the small increase in Blue Cross. As of December 1, a total of 181 new members had been added to the Statewide Group, which brings the contracts to 811.

Keogh Bill: The Committee is giving careful study to the new law which permits limited income-tax deductions to the self-employed for amounts set aside to fund future retirement. The Committee has received proposals from numerous organizations. As of this date, the Internal Revenue Service has not issued rules and regulations for pension plans under the new law, and the Committee feels that the Society should move very slowly in recommending any program under the Keogh law to IMS members.

W. O. PURDY, M.D., *Chairman*

IOWA BAR LIAISON COMMITTEE

The Iowa Bar Liaison Committee has had no meetings with the comparable committee of the Iowa Bar Association, and has had no problems referred to it for study up to this date.

J. M. TIERNEY, M.D., *Chairman*

MEDICARE CLAIMS COMMITTEE

The Medicare Claims Committee has continued to aid the IMS staff in processing Medicare claims.

The members of the Committee have served primarily as consultants, and it has not been necessary for them to hold a formal meeting to adjudicate Medicare cases.

We feel that the program continues to operate in a satisfactory manner for all involved, including the federal government, the patients and the physicians of Iowa.

In addition to Medicare claims, the Committee has continued to review questionable Vendor Payment claims submitted to the State Department of Social Welfare through county medical and remedial-care committees. The cases referred to the Committee have been reviewed in detail, and final decisions have been sent to the State Board of Social Welfare. Although the numbers of Vendor Payment cases referred to the Committee have decreased, it is felt that the method of reviewing Vendor Payment claims could be improved, and that perhaps a study toward this end should be instituted.

J. H. KELLEY, M.D., *Chairman*

COMMITTEE ON PARAMEDICAL SERVICES

The Committee on Paramedical Services has had no meeting during the past year, and no matters have been referred to it.

F. E. THORNTON, M.D., *Chairman*

POLICY-EVALUATION COMMITTEE

The Policy-Evaluation Committee met on August 16, 1962, and considered several major items.

1. The resolution of the Scott County Medical Society on "Comprehensive Nationwide Health Care Program" had been referred by the House of Delegates to the Committee for consideration. The resolution was studied carefully, and although the Committee agreed with the resolution in principle, it did not feel that it would be within its duties if it were to formulate specific details for putting such a plan into effect. The Committee wrote a letter inviting the Scott County Medical Society to send representatives to meet with the Policy-Evaluation Committee to discuss the resolution, and to provide specific details on how the plan might be implemented, but as of this date, the Committee has received no answer.

2. At the request of the Policy-Evaluation Committee, the 1962 House of Delegates re-referred the Blue Shield Blue Chip Program to it for further study. At the Committee's August meeting, the Blue Chip Program was discussed at length, and the points considered included (a) interpretation of the "no fee schedule" contract, and specifically paragraph 9; and (b) the method of adjudicating claims.

The Policy-Evaluation Committee asked the president of the IMS to appoint a subcommittee to interpret the

language "customary, usual and reasonable charges" and to study the existing procedure for handling disputed Blue Chip claims. That subcommittee, composed of H. J. Smith, M.D., chairman, S. P. Leinbach, M.D., and H. W. Mathiasen, M.D., held several meetings at which members of the Society, representatives of the Iowa Insurance Commissioner and personnel of Wisconsin Blue Shield appeared. Much information and further interpretation of the meaning of "customary, usual and reasonable" fees, as intended in the Blue Chip contract, were outlined.

The subcommittee has made its report, and prior to the 1963 annual meeting, the Policy-Evaluation Committee will meet to consider it and to formulate definite recommendations for presentation to the House of Delegates.

3. The Policy-Evaluation Committee also discussed the matter of converting all Blue Shield contracts to the new Iowa Relative Value Index (Green Book). Representatives of Blue Shield informed the Committee that such conversion is being made as rapidly as possible, but it is estimated that 18 months will be required to convert all existing contracts.

The Policy-Evaluation Committee recommends that all Blue Shield contracts be converted to the Green Book as rapidly as circumstances permit.

4. The Policy-Evaluation Committee spent some time considering the National Blue Shield Senior Citizens Program, and the reopening of the Iowa Senior Citizens Program originally scheduled for October, 1962. At the meeting on August 16, the Committee was asked by Blue Shield officials to recommend that the service income levels of the existing Iowa Senior 65 Plan be increased to coincide with those of the proposed National Program. These changes would have required increases from \$2,000 and \$3,000 to \$2,500 and \$4,000. The Committee did not feel it had the power to request that Blue Shield increase service income levels without action of the appropriate policy-making body of the Iowa Medical Society.

The Committee agreed with a recommendation that the service income levels of the Iowa Senior 65 Plan be raised to \$2,500 and \$4,000, and that the fee schedule be based on the Green Book, when and if this matter is considered by the appropriate policy-making body. This recommendation was reported to the Executive Council on September 5, but the Council took no action upon it. The Iowa Senior 65 Plan with service levels of \$2,000 and \$3,000, and the new Blue Shield Program with service levels of \$2,500 and \$4,000 were both offered to Iowa Senior Citizens during an open-enrollment period in November and December, 1962.

W. L. DOWNING, M.D., *Chairman*

KING-ANDERSON PLANNING COMMITTEE

At the 1962 annual meeting the Committee presented a supplemental report which outlined in great detail the program the Society was conducting in opposition to the King-Anderson Bill.

All physicians were gratified when their efforts on a local, state and national level played a part in the rejection by the Senate of the United States, on July 17, of that proposal for financing health care through the Social Security mechanism.

The Committee appreciates the efforts made by the doctors of Iowa in that campaign. However, since the

Administration has indicated that it will again press for legislation similar to the King-Anderson Bill, they can expect to be asked for their help at least one more time.

The King-Anderson Planning Committee will continue to carry out its function by maintaining close liaison with other committees of the IMS dealing with this legislative matter.

C. W. SEIBERT, M.D., *Chairman*

PODIATRY COMMITTEE

The 1962 House of Delegates directed the Podiatry Committee to discontinue its meetings with the podiatrists until such time as a unified approach regarding paramedical groups has been formulated, at either the state or the national level. As a result of this action, the Podiatry Committee has held no meetings and has nothing to report.

J. E. KELSEY, M.D., *Chairman*

COMMITTEE ON RADIATION CONTROL

Although it has not been necessary for the Committee on Radiation Control to hold a meeting during the past year, it stands ready to assist in any legislative action regarding a radiation control bill.

Through past action, the Medical Society has formulated a position on radiation control legislation, and when an appropriate bill is submitted to the Legislature, it will be supported by this Committee and the IMS.

The Committee will be available as consultants or advisers to the State Advisory Council on Radiation Control, when and if such an agency is finally activated.

F. R. PETERSON, M.D., *Chairman*

SUBCOMMITTEE ON MEDICAL PRACTICE IN HOSPITALS AND NURSING HOMES

The Subcommittee on Medical Practice in Hospitals and Nursing Homes met on November 20, 1962, in the offices of the Iowa Medical Society. In attendance were F. C. Coleman, M.D., A. P. Echternacht, M.D., R. R. Edwards, M.D., and L. S. Wentworth, M.D.

The first order of business was a report of the survey that was requested by the Subcommittee in October, 1961, on the medical supervision of radiology and pathology provided in Iowa Hospitals in accordance with the provisions of House File 21. Of the 137 questionnaires that had been sent out, 112 or 82 per cent were returned. Of those replying, 63 hospitals or 56 per cent indicated that the pathology service was supervised by either a resident or visiting pathologist, and 100 or 89 per cent indicated supervision of radiology services by a resident or visiting radiologist. One hundred six hospitals returned samples of billing and admission forms.

The Subcommittee also reviewed the report made to it in 1961 by a representative of the Iowa Association of Pathologists, which evaluated the relationship between that group and Iowa Medical Service. The Subcommittee believes that progress has been made on various points included in the report, and that after Iowa Medical Service adopts the new Iowa Relative Value Index (Green Book), the inequities that were created at the time of the transfer of pathology and

radiology services from Blue Cross to Blue Shield will be corrected.

The Subcommittee made the following recommendations to the Iowa Medical Society Board of Trustees:

1. The field secretaries should conduct a fact-finding survey by visiting with the chiefs of medical staff of small hospitals, in an effort to determine which ones need and desire assistance in improving radiology and pathology services.

2. A request be sent to Iowa Medical Service urging them to implement the new Iowa Relative Value Index (Green Book) as soon as possible.

3. The IMS staff, in cooperation with legal counsel, review the billing and admission forms being used by Iowa hospitals to determine whether or not they are complying with the provisions of House File 21. The chiefs of staff of any non-complying hospitals should be so notified.

The Subcommittee next reviewed the progress that had been made in the coverage of physiatry services by Blue Shield, which was recommended by the Subcommittee during its 1961 deliberations. Since this has not taken place, the Subcommittee believes that Blue Shield should again be urged to incorporate physiatry services in its contracts as soon as possible.

The matter of the availability of patients' hospital records to attorneys was brought to the Subcommittee's attention. An opinion, prepared by legal counsel, is on file and has been transmitted to the IMS Board of Trustees.

The Subcommittee was asked whether or not the accounting practices and procedures in hospitals are consistent with the provisions of House File 21 that a hospital is not to profit financially, from the services of physicians. It was the Subcommittee's recommendation that the IMS field secretaries should check with those members of IMS who practice under agreements with hospitals, to determine the status of their accounting arrangements, and any unsatisfactory situations should be brought to the Subcommittee's attention. It was further proposed that three members of the IMS meet with three members of the Iowa Hospital Association to outline to them the motives, purposes and intent of the study. It should be made clear that the IMS is simply trying to determine accurately the costs of operating the hospital departments supervised by physicians.

The Subcommittee was apprised of the possibility that at least one hospital in Iowa is employing an anesthesiologist on a salary. The Iowa Society of Anesthesiologists has been requested to study this matter and report its findings to this Subcommittee.

A discussion of the possible lack of practical liaison and friendly relations between physicians and Blue Shield was also an important item on the Subcommittee's agenda. It apprised officials of the IMS of its discussion, and said that it was the belief of the members of the Subcommittee that some of the complaints, particularly those having to do with liaison and the auditing program of Blue Shield, had merit and should be discussed with representatives of Blue Shield.

The question of a physician's rights when denied renewal of his hospital staff membership was submitted to the Subcommittee. It was agreed that this matter would be brought before the House of Delegates, after background material had been obtained from the Joint Commission on Accreditation of Hospitals.

The effects on the practice of medicine of the operation of nursing homes by hospitals and of the develop-

ment of "satellite" hospital systems by large hospitals were discussed and tabled until additional information is obtained.

ARTHUR P. ECHTERNACHT, M.D., *Chairman*

SUBCOMMITTEE ON ADOPTIONS

This Subcommittee has continued to watch legislative developments in the field of adoptions. Certain welfare and social agencies favor outlawing private placements. The Subcommittee has the opinion that this state does not at present have enough qualified personnel to carry out such a program properly. Private-agency workers are not in sufficient supply, and too many Social Welfare and Board of Control workers are unqualified. However, we do favor a mandatory pre-placement investigation which will result in more thoroughly studied applications for placement and adoption.

R. L. WICKS, M.D., *Chairman*

PLAN AND SCOPE COMMITTEE

In accordance with a recommendation of the president at the annual meeting in 1962, the IMS Plan and Scope Committee has taken initial steps to strengthen the committee structure of the Society, particularly those committees that carry on constant liaison with departments of the state government.

The Committee is in the process of preparing proposed revisions in committee structure for presentation to the Committee on Articles of Incorporation and By-Laws, so that it, in turn, may recommend appropriate changes in the Articles of Incorporation and By-Laws to accomplish the objective that the Plan and Scope Committee has in mind—that of streamlining committee structure and strengthening relations with state departments. The commission approach is being considered.

A supplemental report of the Plan and Scope Committee will be presented to the House of Delegates in April.

O. N. GLESNE, M.D., *Chairman*

PUBLICATIONS COMMITTEE

THE JOURNAL OF THE IOWA MEDICAL SOCIETY has continued, throughout the year, to publish the scientific lectures delivered at the IMS annual meeting and at scientific conferences and meetings at Iowa City and elsewhere in the state, as well as articles and case studies volunteered by Iowa doctors. Besides, it has continued as one of the principal means of keeping the members of the Society abreast of organizational and socio-economic developments and projects.

The Treasurer's Report in this HANDBOOK points out once again that the JOURNAL is one of the more expensive of the Society's activities. That statement is correct, and since the expected rise in advertising revenues has been disappointing, there seems no reason to expect that it will soon "break even." Yet, it should be borne in mind that the JOURNAL performs a major part of the Society's educational functions, and helps importantly to keep the Society a cohesive and effective organization.

On the recommendation of the editors, the Publications Committee has recently authorized two changes in the JOURNAL's rates. The subscription price has been raised from \$3 to \$5 per year, paralleling the increases that other state medical societies have ordered in the

subscription prices of their publications. The new price won't make much difference as far as the Society's income is concerned, for the number of subscriptions sold for cash is relatively small. But it will justify charging a greater amount of JOURNAL expenses against the members' dues on the books of the Society—an amount more nearly approximating the actual cost per member of publishing the magazine. The second change in rates is to be an increase in the price of listings in the "Physicians Directory" section of the JOURNAL, from \$1 per month, regardless of the number of lines in the entry, to a schedule that will both make the price proportional to the length of the listing, and cover the cost of printing the "Physicians Directory."

The editors hope it will be noted that each member of the JOURNAL staff performs various tasks for the Society in addition to editorial ones, and they assure the delegates and the membership that they are being as economical in their publication work as is consistent with the maintenance of a worthwhile and creditable magazine.

(This concludes the material that was published in the HANDBOOK FOR THE HOUSE OF DELEGATES.)

The Speaker of the House of Delegates introduced physicians who were serving in the House for the first time, and also the individuals who were seated at the head table. He announced reference committee appointments.

The presentation of Supplemental Reports was the next order of business. Except as hereafter noted, each report was referred to the appropriate reference committee for study.

Supplemental Reports

THE BOARD OF TRUSTEES

Supplemental Report A: General Information

Presented by S. P. Leinbach, M.D., Chairman, Board of Trustees.

(Referred to the Reference Committee on Reports of Officers. For final action by the House of Delegates, see the report of the reference committee.)

I. The Board of Trustees has had an exceptionally active year, having met on fourteen occasions, with three of these meetings occurring between May 16 and June 1 last year.

II. On Friday and Saturday, May 18 and 19, 1962, the IMS was host to a thirteen state Regional Rural Health Conference which was held in Des Moines under sponsorship of the American Medical Association. Society officers, committee members, and staff assisted in the development of the program for this Rural Health Conference, as well as other local arrangements—publicity, etc.

III. On Sunday, May 20, President Kennedy appeared on a live nationwide television program from Madison Square Garden to climax a public information campaign designed to compel the Congress of the United States to enact King-Anderson legislation.

On Monday, May 21, the AMA, with Dr. Edward Annis as its spokesman, presented its rebuttal over national television, also from Madison Square Garden.

As a part of the over-all AMA campaign, the IMS

participated in and coordinated an Iowa newspaper and television information program which began on Sunday morning, May 20, preceding the President's appearance at the Madison Square Garden Rally. These activities are reported in summary form in the House of Delegates Handbook as a part of the Report of the Committee on Public Relations.

Response to the AMA program from the public, the doctors, and professional allies was gratifying and officers of the Society found opportunity to compliment the AMA for its professional performance in replying to the Administration's proposal.

We wish to commend the county medical societies and to thank our allies for their cooperation in sponsoring newspaper advertisements which appeared in conjunction with these national television programs, as well as for the many other activities they carried out which contributed immeasurably to the ultimate tabling of an amendment that would have kept the King-Anderson Bill alive in the last session of Congress. We are all greatly indebted to medicine's legislative leaders in the county and state societies, and AMA, because in the final analysis it was the legislative effort that accounted for the success on July 17.

IV. In accordance with a recommendation of the House of Delegates, based on a resolution sponsored by the Linn County Medical Society, the president of the Society appointed a Study Committee to consider rescheduling and streamlining the sessions of the House of Delegates. Since many members had expressed interest in having the Annual Meeting of the Society arranged at a hotel rather than at the Auditorium, this matter was also considered by the Study Committee and the Board of Trustees. The "resolves" of the Linn County Medical Society resolution are as follows:

Resolved, That the Iowa Medical Society seriously explore the possibility and feasibility of changing the days of the two sessions of the House of Delegates, and be it further

Resolved, That in the exploration they give serious thought to changing the days of the session so that all business of the House of Delegates will be concluded by/or on the first day of the General Session.

The special Study Committee met on June 20, 1962, and considered several proposals, but after exploring all of them it finally concluded that it would be impractical for the Society to attempt to compress the business sessions of the House for the following reasons:

1. The volume of business has increased greatly during the past several years, which necessarily results in longer meetings of the House, both on Sunday and Wednesday.

2. Reference committees and reference committee chairmen need ample time to complete their hearings, to consider all aspects of resolutions and reports, and to prepare recommendations for presentation to the House of Delegates. It was felt that a "compressed" schedule would not allow reference committees enough time to develop comprehensive and considered reports.

3. Adequate time is necessary to enable the IMS staff to prepare copies of all reference committee reports for distribution to the delegates at their final session. It was pointed out that at the 1962 meeting, several reference committee reports were not ready for duplication until late Tuesday afternoon, and the delegates' packets were not completed until 11:30 Tuesday night.

4. On policy matters, delegates must be permitted to express themselves, without time limits.

In a separate action, it was agreed that the 1963 Annual Meeting should be held at a downtown hotel, and the Fort Des Moines was selected because of its facilities and the open dates of April 7-10. Ordinarily, the Annual Meeting would occur later in April, but these were the only dates available in April. The findings and recommendations of the Study Committee and Board of Trustees were approved by the Executive Council at its August meeting. It is realized that arranging the convention downtown where there is less space than at the Auditorium may cause some inconvenience, but we feel this will be off-set by a more efficient and compact Annual Meeting, at a considerable reduction in overhead expense.

This venture is experimental, and the officers would certainly appreciate your comments regarding arrangements for the 1964 convention.

V. The Board of Trustees congratulates Dr. Scanlon on his selection of a Program Committee and is impressed with the excellent program that has been developed.

VI. Last fall, the Society was host to 165 physicians who represented forty county medical societies at a State Conference for County Society Officers and Other Representatives. According to written and verbal response, the program was well received and we understand the president-elect contemplates a similar event next fall. As all of you know, the Medical Society is constantly endeavoring to strengthen its relations with the county medical societies and individual members, and this Conference of County Society Officers and Other Representatives has proved to be an excellent method of communicating to the membership.

VII. During the summer of 1962, your Society officers, committee members and staff spent a considerable amount of time acquainting candidates for public office with the point of view of the IMS on various legislative issues. This never-ending process always requires extra attention in an election year, since it is essential in establishing proper rapport with candidates that contacts be made before, not after, the candidates assume office. The Society is indebted to the Legislative Committee, the members of the staff who work with it, legal counsel, and county legislative contact men, for their excellent support.

With the Iowa Legislature and Congress of the United States convening in January, considerable time was spent during the fall preparing IMS representations to these two important legislative bodies. The Legislative Committee has reported on its work in the delegates' HANDBOOK, which we understand will be up-dated by a supplemental report.

VIII. During the year, the Board has been called upon by the president to assist him in numerous appointments involving replacements on the Board of Trustees, the Council, committees, and boards of state government.

IX. Activities of all the Society's committees are too numerous to mention, but it seems important to highlight a few of them:

a. For instance, the Committee on Medical Education and Hospitals has worked diligently in an effort to establish good working relations with the College of Medicine and its new dean, Dr. Robert C. Hardin. Most of you have met Dr. Hardin, and those of you who haven't will have this pleasure today.

b. The Relative Value Study Committee completed its work at the last annual session and a copy of the

new Relative Value Index (Green Book) was sent to all members last fall.

c. The Public Relations and Health Education Committees are continuing to utilize newspapers, radio and television to inform the public on the various projects and activities of the Society, as well as to educate it on matters of personal health.

d. The Cornell University Automotive Crash Injury Survey is presently in its third stage. The Society's Automotive Safety Committee has worked closely with Cornell University in the implementation of this project.

e. In cooperation with the Iowa Interprofessional Association and Civil Defense authorities, the Committee on National Emergency Medical Service has updated lists of county defense and civil disaster committees and is working closely with the new Iowa Director of Health Mobilization who came to Iowa only recently.

f. The Prepayment Committee has under active consideration the problem of utilization of hospital and medical services.

g. The Fourth Hawkeye Science Fair, which is co-sponsored by the Iowa Medical Society, Drake University and the DES MOINES REGISTER & TRIBUNE, was concluded yesterday. Each year this event seems to improve and we believe it to be a truly worthwhile public service project. In addition to the Society's co-sponsorship of the Hawkeye Science Fair, it also participates in the scholarship programs of the Eastern Iowa Science Fair (Cedar Rapids) and the Northwestern Iowa Science Fair (Cedar Falls).

Practically all of the Society's standing and special committees have prepared reports which appear in the House of Delegates Handbook or they will present supplemental reports today. The Board of Trustees wishes to express its appreciation to the Chairmen and members of all the committees who have worked on behalf of the Society during the past year.

X. I feel the membership should again be told that it is through the loyalty, dedication and long hours of extra work on the part of each member of the staff that such an active program is carried out.

I also feel the members should be informed (although they are already aware of this) that we are indeed fortunate to have as executive director, Mr. Donald L. Taylor. Mr. Taylor is recognized throughout the country as an outstanding medical executive. One reason, among many, for his success, is his total and ever-abiding loyalty to the physicians, not only in Iowa, but everywhere. This man's every thought and every action—both on and off the job—is in the interest of enhancing the effectiveness and prestige of the medical profession. This I know to be positively true. Not only is Mr. Taylor endowed with this outstanding characteristic, but he has instilled the same philosophy strongly among the staff members of the IMS. Thus, the Society has as its staff a group of people working in close harmony and motivated always toward the interests of each individual physician in the state, as well as organized medicine as a whole.

I have nothing but total praise and commendation to make relative to the staff of the IMS, and its executive director, Mr. Taylor.

XI. This year the Report of the Board of Trustees is arranged in four sections, and I have asked the other two trustees to join me in presenting these

supplemental reports. Dr. O. D. Wolfe will review the Society's finances and present a progress report on the IMS Building Program, and at the conclusion of his remarks, Dr. Cecil Seibert will discuss the proposed Charitable Foundation. I will then present the final supplemental report concerning the meetings between IMS representatives and Blue Shield.

It's my pleasure to present Dr. Otis D. Wolfe.

THE BOARD OF TRUSTEES

Supplemental Report B: Finances and Building Program

Presented by O. D. Wolfe, M.D., trustee.

(Referred to the Reference Committee on Reports of Officers. For final action by the House of Delegates, see the report of the reference committee.)

I. Finances

We hope each of you has examined carefully the Treasurer's Report which begins in the Delegates' Handbook at page sixteen. If you haven't, we encourage you to do so.

Society operations during the year 1962 resulted in an excess of expenses over income of \$12,793.26. The major reasons for this loss can be attributed to three items: (1) Annual Meeting, (2) JOURNAL OF THE IOWA MEDICAL SOCIETY, and (3) King-Anderson campaign.

Generally in previous years, annual meeting income has been sufficient to defray expenses incurred; however, in 1962, there was a sharp increase in expenses which resulted in a loss of approximately \$4,000. This deficit was the result of a decrease in exhibit income, an increase in the over-all expenses for guest speakers, and generally higher costs for services and facilities.

As previously mentioned in Supplemental Report "A" of the Board of Trustees, one of the major reasons for holding this Annual Meeting in a hotel is to reduce overhead. We hope this year the Annual Meeting will be self-supporting.

As a result of congressional investigations, the drug industry began early in 1961 to curtail its investment in medical journal advertising. This has greatly reduced the JOURNAL's most important source of income; the result—JOURNAL expenses exceeded income \$16,000 during the year 1962. To point up the decline in advertising income, in 1959 income approximated \$54,000; it dropped to \$34,000 in 1962, or \$20,000 less.

In considering the financial condition of the JOURNAL, we ask you to pay particular attention to the fact that actual publishing costs have been decreasing during the past few years.

In view of the fact that we must rely on the State Medical Journal Advertising Bureau, Chicago, for the sale of space in our JOURNAL, there is little the Board of Trustees can do directly to correct this problem. However, we are exploring other possible sources of income and you may be assured that we will do everything possible to establish and maintain the JOURNAL on a fiscally sound basis.

The JOURNAL OF THE IOWA MEDICAL SOCIETY is considered one of the outstanding ones in the country. We should be proud of this recognition and on everything possible to maintain it.

As mentioned in the report presented by Dr. Leinbach, the Administration made an all-out effort in 1962 to enact legislation which would permit the financing of health care for the aged through the Social Security

mechanism. To counteract this, the IMS developed and implemented a very comprehensive campaign to prevent passage of this legislation. It became necessary for the Board of Trustees to appropriate more funds for this purpose than was contemplated when the budget for 1962 was assembled. In view of the results, we hope you will agree that it was worth the effort and the funds expended.

As of December 31, 1962, Society reserves totaled approximately \$100,000 and were diversified between savings accounts, corporation stock, government bonds and building fund provision.

In spite of last year's deficit and in the hope that remedial measures will more nearly balance income and expenses in the year 1963, the Board of Trustees recommends that IMS dues for the year 1964 remain at \$90.

II. Building Program

In 1962, the House of Delegates authorized the Board of Trustees to undertake planning for a new Iowa Medical Society building.

In considering this request, the House of Delegates' Reference Committee on Reports of Officers submitted the following conclusions which were approved by the delegates:

"Two things are fact: (1) Our present building is at this moment too small, and (2) if the activities of the Society are to be carried on at their present rate—and we expect them to actually increase—it is necessary that we give approval to the Board of Trustees to proceed with investigation, preparation and finalization of plans for adequate facilities for the office of the IMS. This authority on the building proposal is given with the expressed understanding that there will be no increase in dues. If this becomes necessary, the project must be returned to the House of Delegates for further action."

The Board of Trustees desires to re-state some of the facts it presented to the members of this House in 1962, and then report its progress on the building program to date.

Our comments to the House of Delegates last year were as follows: "For some time, the Society has been setting aside building depreciation funds in a separate account to accumulate for the purpose of remodeling and enlarging the Society's present quarters—or, for the construction of a new building, should this seem desirable. For at least three years, the Board of Trustees has been on the look-out for a tract of land that might be suitable as the building site for a new home for the IMS. This has received serious attention in the last few months, since a parcel of land may become available that seems ideal in terms of cost, location, etc.

"The present building was completed in 1952, and because of rapid growth, the building has undergone at least two major remodelings. Those of you who have not taken occasion to visit the headquarters office of the Medical Society should do so, because we're sure you will agree that considerable additional space is needed to house the Society.

"The Board has conferred with a Des Moines architect to determine whether or not it would be advisable to attempt another remodeling, and he discourages it. If this were done, it would mean attaching a new structure to the old one, which would be a costly procedure and would not increase to any appreciable degree the value of the present property. Furthermore, city zoning would require the acquisition of additional parking space if we were to take the land that is now used for

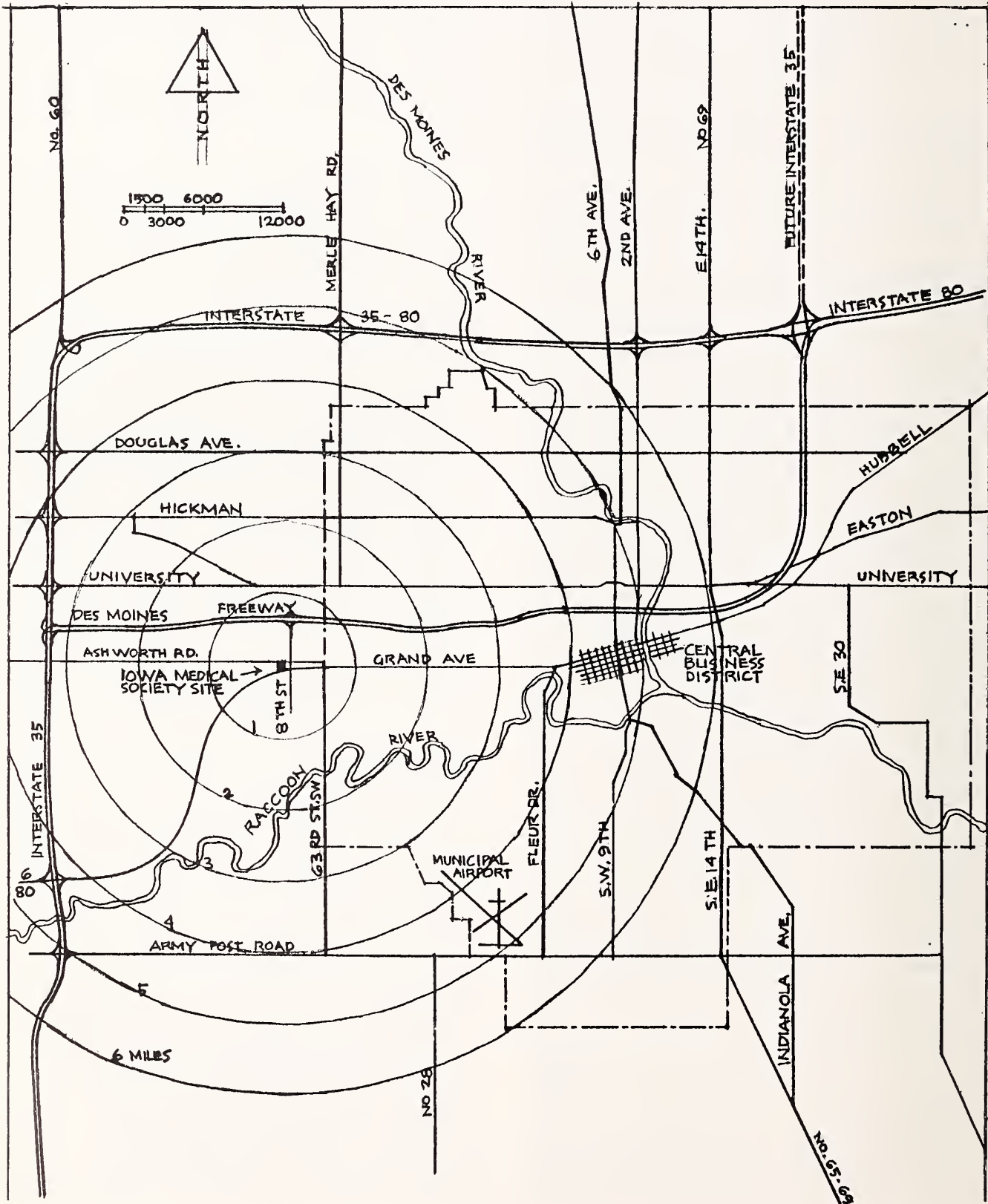
parking for the office expansion. We often hear complaints from members that we don't have adequate parking space at present."

The Board is pleased to report that it has purchased, out of reserves, a tract of land involving approximately three acres in a very select location in West Des Moines. Included in the packet of each delegate are

geographic and site plans which describe to detail the size and location of the property and the various accesses to it from all parts of the city.

We were fortunate to be able to negotiate with one owner for the purchase of this property, which is desirable, both in terms of location and size.

At this point, the Board of Trustees feels it must



THE BOARD OF TRUSTEES

Supplemental Report C: Iowa Medical Foundation

Presented by C. W. Seibert, M.D., trustee.

(Referred to the Reference Committee on Reports of Officers. For final action by the House of Delegates, see the report of the reference committee.)

We have analyzed the activities of the Iowa Medical Society, and according to legal counsel, many of them would clearly be classified for tax purposes in the "charitable, scientific, or educational" field. We have also studied the Charitable, Educational and Scientific Foundation, Incorporated, of State Medical Society of Wisconsin, and have noted that this Foundation carries on some types of activities which are engaged in by the Iowa Medical Society. Also, the Wisconsin Foundation is expanding the functions and outreach of the medical profession in that state, in serving the public in many commendable ways.

We also are aware of the fact that the Iowa Medical Society has created two tax exempt organizations. The first of these, the Iowa State Medical Society Educational Fund, Inc., was organized in 1952. This foundation has substantial assets and has made an outstanding contribution to the profession through making loans or grants to medical students.

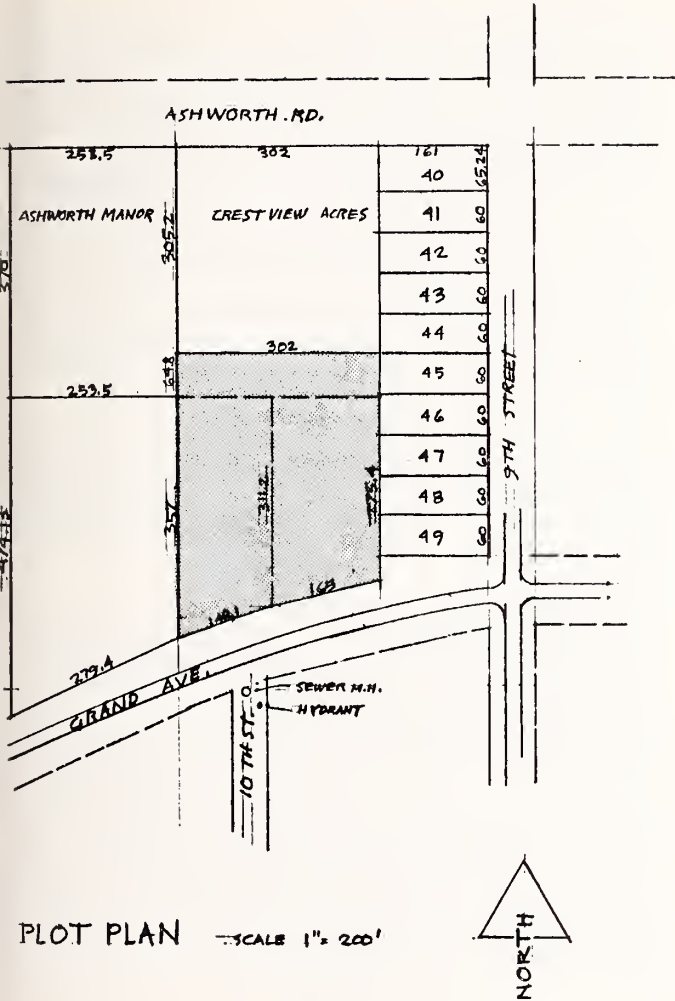
The other foundation is the "Educational and Scientific Trust of the Iowa State Medical Society" which was organized on October 1, 1959, pursuant to a resolution adopted by the House of Delegates at the 1958 annual meeting. This foundation was created for the primary purpose of developing a new concept of environmental health and cooperation with the public at the local level. This foundation has no assets or liabilities and has been inactive since 1959.

It is the recommendation of the Board of Trustees that the latter foundation, the Educational and Scientific Trust of the Iowa State Medical Society, be dissolved, and further, that the articles of the Iowa State Medical Society Educational Fund, Inc., be modernized and amended with the name changed to Iowa Medical Foundation, in order that this Foundation may not only carry on the worthwhile activities of the past but may branch out into additional areas of charitable, educational and scientific significance. The Board of Trustees has been encouraged to take this action by George H. Scanlon, M.D., who has been the principal guiding light of the Educational Loan Fund since its inception in 1952. He favors the establishment of the Iowa Medical Foundation and having its general administrative affairs conducted through the central IMS office.

Accordingly, the following resolution is submitted for your consideration:

Resolved, That this House of Delegates request the members of the "Educational and Scientific Trust of the Iowa State Medical Society" to dissolve the corporation and distribute any assets to the Iowa State Medical Society Educational Fund, Inc.;

Be It Further Resolved, That this House of Delegates request the members and directors of Iowa State Medical Society Educational Fund, Inc., to amend its articles of incorporation to change the name of the foundation to "Iowa Medical Foundation," to make any further changes that are necessary or desirable to permit an expanded program of charitable, scientific and educational activity and to provide for a Board of Directors of nine persons, three of whom will be the incumbent Trustees of the Iowa Medical Society, and two Past Presidents of the Iowa Medical Society, with four additional directors to be selected by these five, the four additional directors to include if desired the Executive Director of the Iowa Medical Society and one other non-medical person, and two members of the Iowa Medical Society.



turn to the delegates and the general membership of the IMS for guidance and decision. You who are members of the House are informed on our existing building circumstances, so we believe it should be up to you to decide when and if the Society should incur the expense of constructing a new home office.

The Board hopes new ways and means can be found to increase the Society's income, but is not overly optimistic in this regard. If the House of Delegates authorizes the establishment of a Educational, Scientific and Charitable Foundation, and when it is functioning, perhaps some of the expenses that the Society incurs in projects that are strictly scientific or essentially in the public interest can be assumed by the Foundation, thus providing limited relief to the IMS budget. In any event, it will be some time before the Foundation can contribute.

All members of the Society are cordially invited and encouraged to visit the present headquarters of the Medical Society at 529-36th Street, here in Des Moines, and also the new building site. For the best route to the present Medical Society building, go west on Grand Avenue to 36th Street, and turn right. The building is in the middle of the block on the east side of the street, and is well identified. To the new building site, proceed west on Grand to 10th Street in West Des Moines. The property is opposite 10th Street on the north side of Grand Avenue.

The Board of Trustees respectfully invites your comments and recommendations.

THE BOARD OF TRUSTEES

Supplemental Report D: IMS-Blue Shield Joint Meetings

Presented by S. P. Leinbach, M.D., chairman, Board of Trustees.

(Referred to the Reference Committee on Insurance and Medical Service. For final action by the House of Delegates, see the report of the reference committee.)

In 1962, the House of Delegates approved the following recommendations which were embodied in the Report of the Reference Committee on Reports of Officers:

"In pursuit of mutual improvement, both for the Iowa Medical Society and Blue Shield as they serve the public, the Committee recommends that a mechanism be created to have regular and continuing contacts between the Board of Trustees and Blue Shield, such as a Subcommittee of the Board of Trustees meeting with representatives of Blue Shield Public Relations, Physicians' Relations, Sales and Claims Departments, to advise and discuss the inter-relationship of Blue Shield and the Iowa Medical Society. It is specifically recommended by this Committee that the Board of Trustees report back its progress and action to the next meeting of the House of Delegates."

In accordance with this directive, the full Board of Trustees held five sessions with representatives of Blue Shield. The fifth and final one was a joint meeting between the Board of Trustees of the Iowa Medical Society, the Executive Committee of Blue Shield, and additional guests—Dr. Ben T. Whitaker, who represents the IMS on the Des Moines Blue Cross Board; Mr. F. P. G. Lattner, president of the Des Moines Blue Cross Plan; and Mr. John Jackson, president of the Sioux City Blue Cross Plan.

The four meetings which preceded the final session with the Executive Committee, held February 19, 1963, were as follows:

Public Relations—September 19, 1962

Physician Relations—October 30, 1962

Claims—December 18, 1962

Enrollment—January 16, 1963

These joint sessions were generally three to four hours in duration. Blue Shield staff members, headed by Dr. E. C. Lowry, were the principal spokesmen, and on each occasion these individuals were very adequately prepared and most willing to discuss their duties, as well as to answer questions posed by members of the Board.

Proceedings of these meetings were recorded in their entirety, and minutes were also prepared following each session. It would be far too time consuming to review with you the minutes in detail, so we shall merely outline our impressions, conclusions, and recommendations. We shall have copies of the minutes available to the members of the Reference Committee, and the members of the Board of Trustees will be in attendance at this hearing.

PUBLIC RELATIONS

The members of the Board of Trustees were greatly impressed by Blue Shield Public Relations staff members. We believe they have a good understanding of the concept of Blue Shield, the philosophy of the private practice of medicine, and the importance of professional and public relations.

Impressions:

1. That Blue Shield should acquaint the public with the fact that it is a fiscal intermediary between the physician and subscriber, and that it is the participating physician who renders the service and who accepts the obligation of full payment—not Blue Shield.

2. The public should be made aware of the fact that in many instances participating physicians accept from Blue Shield less than usual compensation for their services out of a sense of responsibility and obligation to their own plan.

3. That the contribution a participating physician makes to Blue Shield and its members should be emphasized in Blue Shield advertising and promotional materials.

PHYSICIAN RELATIONS

Blue Shield presently employs five Physician Relations representatives. As with Public Relations personnel, the Physician Relations representatives were also most cooperative and willing to provide information about their work.

Impressions:

1. That the IMS continue and improve its liaison with Blue Shield Physician Relations representatives by strengthening communications. It was acknowledged that at the present time these Physician Relations men are provided, on a regular basis, IMS news and legislative bulletins, miscellaneous informational pieces, and the JOURNAL OF THE IOWA MEDICAL SOCIETY.

2. That as an additional means of strengthening relations, Blue Shield Physician Relations representatives should be invited as often as seems appropriate to visit the offices of the Iowa Medical Society to acquaint them with the Society's operation and the problems confronting organized medicine.

CLAIMS

The Board was pleased that it was possible for Dr. C. W. Latchem, chairman of the Blue Shield Claims Committee, and Dr. Donald Kast, medical advisor to Blue Cross, to attend this meeting, in addition to Dr. Lowry, and representatives of the Claims and Accounting Departments.

Procedures for the adjudication of all claims were described, but the major portion of the discussion concerned administration of the Blue Chip Plan.

Two matters of concern have developed in reference to adjudication of Blue Chip claims:

1. Inclusion in the Blue Chip contract of the terms "by others" and "under similar or comparable circumstances within the community."

2. The use of \$5.00 per unit as the guide for screening Blue Chip claims.

Society records indicate that when the House of Delegates approved the establishment of a Blue Chip plan, the language it adopted read as follows: "(b) provide a policy paying the physician's usual equitable fee (and with a reasonable maximum benefit)."

Blue Shield officials point out that when the Blue Chip contract was submitted to the Iowa Insurance Commissioner for approval, he insisted that the phrases "by others" and "under similar or comparable circumstances within the community" be included; further, in approving a rate, that \$5.00 per unit be used as a guide for the payment of Blue Chip claims.

Blue Shield stated there are thirty physicians, described as "chronic offenders," whose fees are generally in excess of the \$5.00 unit. Blue Shield indicated

that in the absence of the difficulty with these physicians, perhaps the Blue Chip program could be maintained. The Board of Trustees pointed out that this misunderstanding between Blue Shield and the thirty physicians may be the result of their not being aware of the Insurance Commissioner's ruling or their insistence that the contract be administered as originally conceived.

Impressions:

1. That the Blue Chip program is not being carried out as originally intended by the House of Delegates because of regulations imposed by the Insurance Commissioner.

2. That it is extremely hazardous to identify a physician or group of physicians as chronic offenders, unless it can be established beyond question of doubt that a physician or group of physicians are deliberately charging more than their usual customary fee, when it becomes known that their patients have Blue Chip contracts.

ENROLLMENT

We believe officers of the Iowa Medical Society now have a better understanding of the problems involved in acquainting prospective customers with the detailed benefits of Blue Shield. We were impressed with the frankness of the Blue Shield Enrollment spokesmen and believe there is great opportunity for physicians and enrollment representatives to be mutually helpful.

Impressions:

1. Inherently people are not inclined to acquaint themselves with prepayment contract provisions until a need arises, and then have a tendency to read benefits into a contract that do not exist.

2. That in the process of enrolling large groups of employees there isn't sufficient time for the representatives to acquaint employees with contract benefits.

3. That since the enrollment representatives are ordinarily judged by their production, it is only natural that in their own interest they attempt to conserve the time of each interview in order to see more people and hence increase their sales.

4. Whether intentionally or unintentionally, it appears some enrollment representatives do not provide their customers with complete information regarding Blue Shield Plan benefits.

5. That Blue Shield is more difficult to sell and service because of contract limitations which generally do not exist in Blue Cross because most Blue Cross Plans provide full coverage.

6. That ways and means be found to improve the attitude of Blue Shield enrollment representatives toward the medical profession so that when these representatives are, in fact, selling physicians' services to the public, they can do so out of a sense of loyalty to the medical profession and with enthusiasm.

7. That since Blue Shield is a program which emanated from the IMS, physicians should feel a sense of responsibility to present it in a good light to their patients or say nothing at all.

8. That, when possible, physicians at the county and community level should join with Blue Cross-Blue Shield representatives when they meet at the conference table with representatives of management and labor to negotiate a prepayment medical care plan for employees.

9. That the IMS has an obligation to assist in developing Blue Shield plans that are in keeping with the times and competition.

10. That generally the enrollment representatives are enthusiastic about selling the Blue Chip contract which, they advise, is being sold in accordance with existing contract language.

11. That the program approved by the House of Delegates in 1961 for sale to federal employees and employees of national accounts is now being offered to other groups.

GENERAL CONCLUSIONS

1. That there have been poor communications between the Iowa Medical Society and Blue Shield at the policy-making and administrative levels.

2. That much of the unpopularity of Blue Shield stems from misunderstanding between it and individual physicians and between it and the IMS.

3. Improved relations are necessary between the two organizations if they are to continue to serve each others' interests, as well as the public's.

4. Evidence of the poor communications between the two organizations is exemplified as follows: (a) That plans approved by the House of Delegates have been subsequently modified without the knowledge of the sponsoring Medical Society or its members, (b) That contracts approved for sale to specific categories of people have been offered to others without the knowledge or approval of the parent organization.

RECOMMENDATIONS

1. Because of the innovations that have taken place since the Blue Chip Plan was originally authorized, the Board feels members of the House of Delegates and the full membership should be apprised of these contract modifications.

2. In the interest of mutual relations, we respectfully suggest that when it becomes necessary to alter a Blue Shield program to conform to insurance regulations or legal requirements after it has been approved by a policy-making body of the Medical Society, either the House of Delegates or Executive Council should be provided opportunity to reconsider the effect these modifications will have on the individual physician's practice before a new plan is offered to the public.

3. That in the future, Society and Blue Shield representatives should make every effort to confer jointly with appropriate state insurance officials to ascertain requirements involving specific plans before they are submitted to a policy-making body for approval. We feel it is essential that the membership have the benefit of full information on any proposed program at the time action is required.

4. That the House of Delegates recommend that regular meetings be scheduled, at least on a quarterly basis, between the Board of Trustees of the IMS, or a committee designated by the Board, and appropriate Blue Shield representatives. It is the feeling of the Board that if these sessions, which have been held during 1962-1963, had occurred in previous years, present misunderstandings would not exist.

We believe meetings between Medical Society officials and Blue Shield officials have value if nothing more is accomplished than a periodic exchange of information of mutual interests and concerns. In our judgment, there is no better way to maintain communications and understanding than for men of good will to meet together to discuss their common problems.

We recognize that formal liaison exists between the Iowa Medical Society and Blue Shield through the

exchange of representatives who serve on the respective policy-making bodies, but feel the joint meetings which we are suggesting will supplement these official contacts, and strengthen the relationship of one organization to the other.

The members of the Board of Trustees spent many hours developing this report. We concluded that in the interest of long-range relations between the Iowa Medical Society and Blue Shield, our findings should be reported with candor, and in a constructive manner. We assure you we have acted in good faith, and, we believe, in the best interest of our profession.

Respectfully submitted,

S. P. LEINBACH, M.D., *Chairman*

O. D. WOLFE, M.D.

C. W. SEIBERT, M.D.

G. H. SCANLON, M.D.

C. V. EDWARDS, SR., M.D.

G. E. McFARLAND, JR., M.D.

R. F. BIRGE, M.D.

L. F. HILL, M.D.

JUDICIAL COUNCIL

(Adopted by the House of Delegates without referral to a reference committee.)

This first section of the supplemental report is for information only.

The Judicial Council met on four occasions during the past year to transact routine business consisting of the following:

1. Rulings on all problems of membership in the Society.

2. Rulings on several minor ethical problems of the Society, and discussions of proposed improvements in relations with allied professional groups.

3. Participation as a part of the Executive Council in other matters pertaining to IMS business.

4. Rulings regarding doctors of osteopathy holding Physician and Surgeon licenses with whom the MD/DO Liaison Committee and the county societies recommended that it shall not be unethical for members of the Iowa Medical Society to associate professionally. These doctors of osteopathy had all been ruled as qualified by the county medical societies in the counties in which they practice. This procedure was directed by the 1962 House of Delegates of the Iowa Medical Society.

To date the Judicial Council has acted favorably on 21 petitions, and has acted unfavorably or has tabled one petition.

In addition to the above, the Judicial Council has been convened in two special meetings to consider charges brought by the IMS Grievance Committee against three IMS members. Inasmuch as the Grievance Committee sits only as a grand jury and mediation board, the Judicial Council is called to hear unresolved problems brought to it by that Committee.

Two of the three cases involved allegations that (a) fees had been charged for unrendered services, and (b) excessive charges had been made for rendered services and the matter could not be resolved by mediation. In both these cases, additional charges of misconduct had been preferred because of failure of the parties to answer summonses and other orders of the Grievance Committee. Compliance with the requests or orders of this Committee is required by the IMS, and

if the Committee could have obtained this cooperation, the charges which it preferred might well have been avoided. In these two cases, censure and probation were both ordered, as well as corrections of monetary discrepancies.

A copy of the findings and directives of the Judicial Council was given, in each instance, to each of the parties concerned in the probation, censure, and punitive action, and a copy was also furnished, for information only, to the State Board of Medical Examiners. This latter action should help greatly to deter these doctors from repetitions of their unethical practices. Each of the above two offenders is to appear again before the Judicial Council in six to 12 months, and to prove, in person and by written report, that the directions of the Council have been carried out.

The third defendant had been charged with unprofessional conduct of a city practice in failing to visit a critically ill patient but, rather, allowing an interne to conduct treatment under telephone supervision. Additional failures of communication had resulted in an unresolved situation when the patient expired unexpectedly. In this case, it was ruled that no ethical violation was proved, since the doctor had met the minimum local standards of practice in such cases. However, **IT IS STRONGLY URGED** that doctors refrain from delegating the care of a critically ill patient without making a personal visit to the patient. Only by such means can the patient and his relatives be reassured as to the attending physician's deep concern, and only thus can ill will be avoided.

Here begins the second and final section of the Judicial Council's supplemental report.

The report of the joint meeting of the Interprofessional Committee of the Iowa Medical Society and Iowa Pharmaceutical Association on Monday, March 18, 1963, was referred to and accepted by the Judicial Council. It is therefore recommended by the Judicial Council that the following statements be included in the appropriate places in the existing Physician-Pharmacist Code of Understanding, dated 1959:

a. Agreements or arrangements between physicians and pharmacists which permit the use of secret formulas, coded prescriptions, imprinted prescription blanks, patronage fee rebates, or gratuities; which deny freedom of choice; and which result in the exploitation of the patient, are not in the best interest of the patient.

b. In the interest of physician-pharmacist relations, and service to the public, it is recommended that all prescription blanks bear the statement, "This prescription may be taken to the pharmacy of your choice."

Mr. Speaker, according to customary procedure when supplemental reports are presented, these proposals would be referred to a reference committee for consideration. However, since it is the Judicial Council which would be asked to serve as the reference committee in this instance, I move the immediate adoption of these changes in the Physician-Pharmacist Code of Understanding.

The Judicial Council has worked diligently and long on many knotty problems. The Council wishes to express its thanks to the Grievance Committee for the superb and impartial investigations it conducted and to commend it for its devotion to duty.

Respectfully submitted,

C. E. RADCLIFFE, M.D., *Chairman*

On behalf of the AMA Educational and Research Foundation, the chairman of the Board of Trustees, Dr. S. P. Leinbach, presented a check in the amount of \$15,375.00 to Dr. Robert C. Hardin, dean of the S.U.I. College of Medicine. Dr. Hardin spoke briefly in acknowledgment of the gift.

Dr. George H. Scanlon, president of the Society, presented a statement which set forth the financial responsibility Iowa taxpayers would have to assume should the King-Anderson Bill be enacted by Congress. This report was presented for information only, and was not referred to a reference committee. It has since been published as the "In the Public Interest" page (green sheet) in the May, 1963, issue of the JOURNAL. As chairman of the Iowa State Medical Society Educational Loan Fund, Dr. Scanlon summarized the financial status of that organization as follows:

Total loans entered into since the inception of the program	\$225,913.42
Loans repaid	75,491.11
Loans outstanding as of April 5, 1963	150,422.31

One hundred fifty-five students have participated in the fund; 45 have repaid their loans in full, and there are about 110 outstanding.

At the conclusion of his report, Dr. Scanlon introduced the two senior medical students from the College of Medicine at Iowa City, who were in attendance as guests of the IMS, Mr. Stephen J. Walsh and Mr. Darran Huggins. Mr. Huggins spoke briefly regarding the student loan fund.

Supplemental reports from standing and special committees were then requested.

Reports of Standing Committees

NOMINATING COMMITTEE

The following slate will be submitted to the House of Delegates today. Additional nominations will be accepted from the floor, after which the Speaker of the House will declare nominations closed.

President-Elect	C. O. Adams, M.D., Mason City O. D. Wolfe, M.D., Marshalltown
Vice-President	Oscar Alden, M.D., Red Oak G. S. Atkinson, M.D., Oskaloosa
Trustee	L. F. Hill, M.D., Des Moines J. H. Sunderbruch, M.D., Davenport
Speaker of the House	L. J. Halpin, M.D., Cedar Rapids
Vice Speaker of the House	C. P. Hawkins, M.D., Clarion P. M. Kersten, M.D., Fort Dodge
Secretary	R. F. Birge, M.D., Des Moines
Treasurer	G. E. McFarland, Jr., M.D., Ames V. L. Schlaser, M.D., Des Moines
AMA Delegate	O. N. Glesne, M.D., Fort Dodge D. F. Ward, M.D., Dubuque
AMA Alternate Delegate	E. M. Smith, M.D., Eagle Grove R. L. Wicks, M.D., Boone
Councilor—Third District	J. L. Powers, M.D., Estherville
Councilor—Fifth District	N. W. Irving, M.D., Des Moines
Councilor—Eighth District	J. H. Sunderbruch, M.D., Davenport
Councilor—Tenth District	E. E. Gamet, M.D., Lamoni

Liaison Delegates to Iowa Medical Society (2)	J. W. Billingsley, M.D., Newton C. P. Hawkins, M.D., Clarion R. C. Larimer, M.D., Sioux City H. W. Mathiasen, M.D., Council Bluffs
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- Respectfully submitted,
- P. C. RICHMOND, M.D., District 1 (Alternate)
 - H. W. MORGAN, M.D., District 2
 - J. P. CLARK, M.D., District 3
 - P. W. BRECHER, M.D., District 4
 - G. E. MONTGOMERY, M.D., District 5
 - C. D. ELLYSON, M.D., District 6
 - J. J. REDMOND, M.D., District 7
 - L. C. PUMPHREY, M.D., District 8 (Alternate)
 - F. O. W. VOIGT, M.D., District 9
 - E. E. GAMET, M.D., District 10
 - J. W. BARNES, M.D., District 11

The report of the Nominating Committee was adopted as presented. Nominations from the floor were requested, and only one was presented, it being Dr. J. E. Houlahan, of Mason City, for the office of vice-president. Nominations were then closed, and nomination speeches were requested and presented.

COMMITTEE ON LEGISLATION

(Referred to the Reference Committee on Legislation & Public Relations. For final action by the House of Delegates, see the report of the reference committee.)

Congress is in session and the 60th Iowa General Assembly is moving into its final stages. The material presented herein will need to be brought up to date at the time this report is read to the House of Delegates, even though only seventy-two hours have elapsed since its preparation. For convenience, the report is in two parts.

NATIONAL LEGISLATION

President Kennedy, in a message to Congress on February 21, outlined his Social Security proposal for health care of the aged. Representative Cecil King (Dem., California) and Senator Clinton P. Anderson (Dem., New Mexico) have introduced the Administration's bill (H.R. 3920 and S. 880). Basically the proposal is the same bill that was rejected by the Senate on July 17, 1962, by a vote of 52-48.

On March 4 and 5, 1963, representatives from the Iowa Medical Society met with the Iowa congressional delegation in Washington, D. C. From that meeting and discussions with AMA Washington representatives, there is every indication that the House Ways and Means Committee may well hold hearings on the King-Anderson bill in late July or early August of 1963. It is quite possible that the President's program will come before the House of Representatives for a vote prior to the adjournment of Congress this year. Every doctor of medicine must continue to expend the time and effort needed to once again defeat this type of legislation.

One of the best weapons in opposing the Social Security proposal for health care of the aged is the Kerr-Mills law (Medical Aid to the Aged). Later in the report I shall comment on the progress of the Kerr-Mills appropriation in the Iowa Legislature. The current status of Kerr-Mills finds 40 states and territories that have now taken advantage of one part of the Kerr-Mills law to improve or expand their Old Age Assistance medical programs. Kerr-Mills medical assistance for the aged programs have been enacted by 35 states

and territories. Also, ten other state legislatures are considering medical aid to the aged bills. All of this has been accomplished with little assistance or support from the Department of Health, Education and Welfare which is responsible for liaison with the states in implementing the Kerr-Mills Act.

The medical profession has been in the forefront of those opposing King-Anderson type legislation and only through the diligent efforts of all of us will medicine remain free. The Committee on Legislation will continue to maintain close surveillance over this legislation and report changes to the membership through Legislative Bulletins.

STATE LEGISLATION

The Committee on Legislation has through Legislative Bulletins kept the membership informed on the progress of the IMS legislative program in the 60th Iowa General Assembly. Although the bulletins have basically dealt with the items of most significance, much time and effort has been devoted to reviewing numerous bills and seeing that the language contained therein protects or strengthens the already existing laws regarding the practice of medicine. In order for the membership to appreciate the scope of work carried on by the Legislative Committee, I will not only comment on the items of particular importance but also items where special time has been devoted.

Medical Aid to the Aged: No doubt most of you have followed the progress of the MAA Appropriations Bill (S.F. 411) and have read the articles that appeared in the DES MOINES REGISTER on March 28, 29 and 31. These stories pointed up certain areas of disagreement between the various health groups and the State Board of Social Welfare. Unfortunately, the material reported in the press was not entirely accurate or complete. The dispute has not involved the amount of money to be appropriated but concerns how the program is to be implemented and what persons should be eligible. The bill as reported out by the Senate Appropriations Committee states that the State Board of Social Welfare shall contract with one or more private organizations for the handling and processing of MAA claims. In addition, the bill states that persons eligible for Old Age Assistance will not be eligible for Medical Aid to the Aged. The Iowa Medical Society, along with other health groups, supports the language contained in Senate File 411.

It is obvious that the State Board of Social Welfare is very opposed to the use of a fiscal agent for processing MAA claims and will make every effort to keep the Legislature from approving this provision.

The section of the bill which has recently caused comment from the Department of Health, Education and Welfare is the provision that persons *eligible* for OAA shall not be eligible for Medical Assistance for the Aged. Federal authorities indicate that this provision is not acceptable since it is not a reasonable standard to exclude from MAA persons eligible but not receiving OAA and who do not wish to apply for such assistance. The real concern of the health groups is not this particular question but rather the wholesale transfer of persons on OAA—specifically those in nursing homes—onto the MAA rolls. The State Board of Social Welfare has indicated it would not prevent such transfers since the law merely states that persons cannot receive benefits under both

programs during the same month but does not prohibit switching from one program to another. We are convinced that congressional intent, Iowa legislative intent and specific provisions of the Iowa MAA Act preclude those eligible for OAA from receiving MAA in all but exceptional circumstances. If the State Board of Social Welfare was voluntarily willing to carry out the legislative intent, there would be no reason for such a provision. Since the State Board has indicated it favors the transfer from OAA to MAA, the health groups feel that the provision now contained in Senate File 411 to prevent such transfers is wise and must be maintained. The health groups are now working on an amendment to S.F. 411 to provide for the person who does not wish to accept OAA but does require health care. Caution will be exercised to prevent opening the way to the abuses of transfers between the two programs that have occurred in other states.

The Committee on Legislation recommends that the IMS establish a policy on how MAA funds should be utilized when and if the appropriations are forthcoming. If MAA is to serve as a means of meeting catastrophic medical expenses, then extreme care should be taken to see that the funds available are spent in a manner to best meet any existing need. Hospital care, nursing home care, drugs and physicians' services appear to be the major medical cost items and the IMS could very well establish a priority list to guide the Committee on Legislation and the IMS representative on the Kerr-Mills Advisory Council to the State Board of Social Welfare in future deliberations and negotiations.

We are hopeful the Senate will have taken action on S.F. 411 prior to the first meeting of the House of Delegates on Sunday, April 7, 1963. At that time, we shall be better prepared to give an up-to-the-minute report on the outlook for proper implementation of Kerr-Mills in Iowa.

Mr. Robert Throckmorton, IMS legal counsel, will address the General Session at 9:00 a.m. Tuesday to discuss in greater detail the implementation of Kerr-Mills in Iowa. We urge every member to attend.

Composite Board: The most recent Legislative Bulletin explained in some detail the several amendments that have been offered to the Composite Board Bill (House File 378). The effect of these amendments will be reported to the House by the IMS Osteopathic Committee. The legislative future of this bill during the 60th Iowa General Assembly is not certain; organized opposition by certain osteopaths has been extremely damaging to the legislators' acceptance of this legislation. The General Assembly is moving into its final stages and much of its time will be devoted to revenue and appropriation measures. If some agreement can be reached within the osteopathic profession, this will enable all concerned to make a special effort to have the bill placed on the calendar for debate. If this is successful, the bill should have a good chance of passage. It is unfortunate that after so much time has been spent in drafting a mutually acceptable bill, resistance from a small segment of the osteopathic profession could thwart this legislation which we believe to be in the best interests of both the public and the two professions involved.

Nurses Practice Act: As has been reported, the Nurses Association abandoned all efforts to enact the orig-

inally proposed Nurses Practice Act (H.F. 170). In lieu of that comprehensive bill, a new bill (H.F. 554) was proposed and reported out by the House Public Health and Pharmacy Committee. The new bill makes only minor changes in the present Code but will make the Nurses Practice Act a licensure law rather than a registration law. The Committee on Legislation reviewed and analyzed the new bill in light of the historical position of the IMS which is one of opposing the licensing of paramedical groups. However, in view of the support given to the bill by the Iowa Hospital Association, and other considerations, the Committee recommended a neutral position on the new Nurses Bill (H.F. 554).

The Committee on Legislation is not clear as to whether the IMS policy on licensing of paramedical groups applies to nurses and would appreciate some guidance from the House of Delegates. We suggest that the question be researched by the proper IMS committee.

Workmen's Compensation: The Senate, on March 21, considered House File 54 which contained a provision to specifically give the right of selection of physician to the employer. An amendment was defeated which would have permitted the employee to select the physician and then a committee amendment was adopted which removed the provision altogether and returned the law to its original form. Because of the concern and interest shown in this question, the whole matter was referred to the Committee on Industrial Health. A supplemental report will be submitted by the Committee on Industrial Health which outlines its decision and which served as a guide for the Committee on Legislation in relating the position of the IMS to the members of the Senate.

Other items of importance that have required considerable time are as follows:

Physical Therapy: House File 389 and Senate File 341 call for licensing physical therapists. Meetings were held with certain physical therapists, following which the Committee on Paramedical Services reviewed this bill and reaffirmed the policy of the IMS, which is one of opposition.

Confidentiality of Medical Studies (S.F. 340 & H.F. 432): Both bills are now on the calendar and if time permits could very well receive favorable consideration.

Pharmacy (H.F. 26): This bill relating to forbidding unlicensed persons from filling prescriptions passed both Houses but was recalled from the Governor's office for further consideration. Certain parties felt that the bill might adversely affect the drug prescribing practices of osteopathic physicians. After several meetings with the proper officials to discuss this bill, it was determined that an amendment was not required and the bill was returned to the Governor and has been signed into law.

Implied Consent (H.F. 10): This bill passed the House and the IMS was instrumental in obtaining an amendment that only physicians or nurses or medical technicians acting as representatives of physicians could draw blood.

House File 258 relating to abolishing licenses of itinerant practitioners was amended to include a grandfather clause, then was favorably acted upon by both Houses.

Optometry (H.F. 115) relates to bait advertising in

the field of corrective eyeglasses, their components and related services. The bill as originally written included a provision that would have brought physicians under the provisions of the optometry practice act. After consultation with optometrists, an amendment was agreed upon which made the provisions of the act part of Chapter 147 of the Code which applies to all practitioners under Title VIII.

House File 68 to increase the maximum millage levy for Broadlawns Hospital in Des Moines has been sent to the Governor. The IMS supported this bill in view of the training program that now exists between the State University of Iowa and Broadlawns Hospital.

Public Health Nurses (H.F. 83) permits county supervisors, city councils and school boards to enter into contracts to provide public health nursing. Several larger Iowa counties have been doing this on an informal basis for several years and this will legalize and should extend this practice in the interest of public health.

Radiation Control: This important piece of legislation has been sponsored by the State Department of Health. Because of the press of other legislation, the Committee has been able to give this bill only sporadic support.

Salaries: The IMS has supported salary increases for the Commissioner of Public Health and the State Medical Librarian. We are hopeful that both will receive increases.

This brief outline should give some indication of the ever-increasing number of bills that are introduced in the Iowa General Assembly which deal with the health field. Your Committee continues to review all bills that may be of significance to the medical profession. So far this session, numerous bills dealing with hospitals, nursing homes, mental health, State Board of Health, State Board of Control, State Board of Social Welfare, State University of Iowa and many other subjects, have been screened by the Committee.

Before closing, I want to urge every Legislative Contact Man present, and all other interested physicians, to attend the LCM Breakfast scheduled for 7:00 a.m. Tuesday, April 9, in the Grand Ballroom of the Hotel Savery. Tickets are \$2.00 and may be purchased at the registration desk of the Hotel Fort Des Moines during the Annual Meeting or at the entrance of the Grand Ballroom of the Hotel Savery on Tuesday morning. Members of the Iowa General Assembly are to be our guests and this provides an excellent opportunity for discussion of the IMS legislative program and to maintain contacts with members of the Iowa General Assembly. The Committee wishes to express its appreciation to the County Legislative Contact Men who continue to serve as a strong link in the legislative program of the Iowa Medical Society. The assistance of these men has proved invaluable in carrying out the duties of the Committee on Legislation.

Respectfully submitted,

HOMER E. WICHERN, M.D., *Chairman*

Dr. L. O. Ely, chairman of the Iowa Physicians Political League, then presented a report on the League. He introduced Dr. Vaughn Adams, of Mobile, Alabama, a member of the Board of Directors of the American Medical Political Action Committee, who reported on AMPAC. Mr. Frank Woolley, a field representative of the AMA, explained "Operation Hometown."

At 1:00 p.m., the House was recessed for a period of one and one-half hours. At 2:30 p.m. the House was reconvened, and the remainder of the supplemental reports were presented and appropriately referred.

NECROLOGY COMMITTEE

(The Speaker asked the members of the House of Delegates to rise during the reading of the names of members of the IMS who had died during 1962. The list appears on page 464 of this issue of the JOURNAL.)

COMMITTEE ON ARTICLES OF INCORPORATION AND BY-LAWS

(Referred to the Reference Committee on Articles of Incorporation. For final action of the House of Delegates, see the report of the reference committee.)

On March 12, 1963, the Committee on Articles of Incorporation and By-Laws considered possible amendments to the Articles of Incorporation and By-Laws of the Iowa Medical Society.

At the conclusion of its deliberations, the Committee recommended that the House of Delegates approve amendments to accomplish the following:

1. That the alternate delegate to the American Medical Association be given voting privileges on the Executive Council, and be classified as an officer of the Iowa Medical Society.

2. That the immediate past president of the Iowa Medical Society be made a member of the Executive Council, with the right to vote.

3. That the Committee on Public Health be supplanted by a Committee on State Departments.

Concerning recommendation No. 1: It was concluded that since the alternate delegate does, in fact, perform all the duties of a delegate, except voting in the House of Delegates of the AMA, he should be considered an officer of the Society, and should have a vote on the Executive Council.

Concerning recommendation No. 2: The Committee believes that in the interest of continuity and full utilization of the background and knowledge of the immediate past president, he should be kept active in the affairs of the Society, and that this can be best accomplished by designating him as a member of the Executive Council, with voting privilege.

Concerning recommendation No. 3: The proposal to supplant the Committee on Public Health with a Committee on State Departments emanated from the IMS Plan and Scope Committee. The Plan and Scope Committee prepared a report that appears in the HOUSE OF DELEGATES HANDBOOK on page 80. It will also present a Supplemental Report which will set forth its reasons for recommending this change. When it met, the Committee on Articles of Incorporation and By-Laws had the benefit of the thinking of the Plan and Scope Committee when it considered this proposal.

To effect the recommended changes, the Committee submits the following resolutions:

RESOLUTION AMENDING THE AMENDED AND SUBSTITUTED ARTICLES OF INCORPORATION OF IOWA MEDICAL SOCIETY

Resolved, That Article IV, Section 16, of the Amended and Substituted Articles of Incorporation of Iowa Medical Society, as amended, be and hereby is amended by striking the whole of the first two sentences thereof and substituting in lieu thereof the following:

"The Executive Council shall consist of the Councilors, the Trustees, the Delegates and Alternate Delegate to the Ameri-

can Medical Association, the President, the President-Elect, the Immediate Past President, the Vice President, the Speaker of the House of Delegates, the Secretary and the Treasurer of the Society, and two Liaison Delegates elected as the By-Laws may provide."

Be It Further Resolved, That the Chairman of the Board of Trustees and the Secretary of Iowa Medical Society be and they hereby are authorized and directed to sign, acknowledge, record and publish the foregoing Amendment as the Eighth Amendment to the Amended and Substituted Articles of Incorporation of the Iowa Medical Society and to do all other things required by law to execute, complete and place in lawful effect said Amendment.

RESOLUTION AMENDING THE AMENDED AND SUBSTITUTED BY-LAWS OF IOWA MEDICAL SOCIETY

Resolved, That the By-Laws of Iowa Medical Society, as amended, be and hereby are amended by deleting from Chapter V, Section 1 thereof, and Chapter V, Section 15, thereof, the words "A committee on public health," and wherever else such words may appear in said Amended and Substituted By-Laws of Iowa Medical Society, as amended, and substitute in lieu of such words the words "committee on state departments."

Be It Further Resolved, That Section 15, Chapter V of the Amended and Substituted By-Laws of Iowa Medical Society, as amended, be further amended as follows:

1. By striking the period (.) at the end of the second sentence thereof and inserting in lieu thereof the following: "with particular reference to the programs of state departments or agencies."

2. By striking all after the word "Trustees" in the last sentence thereof and inserting in lieu thereof the following: "Executive Council and the House of Delegates and, as a whole or through appropriate sub-committees, to establish liaison with, and to represent the society and its policies before, the various state departments or agencies which are concerned with activities relating to the practice of medicine or the public health."

Be It Further Resolved, That the Chairman of the Board of Trustees and the Secretary of Iowa Medical Society be and they hereby are authorized and directed to sign, acknowledge and publish the foregoing Amendments as the Eighth Amendments to the By-Laws of Iowa Medical Society, as amended, and to do all other things required by law or otherwise to execute, complete and place in lawful effect such Amendments.

Respectfully submitted,

P. F. CHESNUT, M.D., *Chairman*
L. J. O'BRIEN, M.D.
E. G. KETTELKAMP, M.D.
R. A. DORNER, M.D.
L. R. FULLER, M.D.

SUBCOMMITTEE ON MEDICAL PRACTICE IN HOSPITALS AND NURSING HOMES

(Referred to the Reference Committee on Miscellaneous Business for study and recommendation. For final action of the House of Delegates, see the report of the reference committee.)

The report of the Subcommittee on Medical Practice in Hospitals and Nursing Homes, published in the HANDBOOK FOR THE HOUSE OF DELEGATES, makes reference to the rights of a physician if he is denied renewal of his hospital staff membership. Research material supplied by the Joint Commission on Accreditation of Hospitals supports the conclusions of the members of the Subcommittee.

The governing board of a private hospital may legally refuse to renew any physician's membership on its medical staff. However, the physician should and does have the right to appeal. This right should be, and usually is, incorporated in the by-laws and rules and regulations of the medical staff. It provides for an appeal to be heard by a joint meeting of the Credentials Committee and Joint Conference Committee of the medical staff and governing board. There is also, of course, recourse to the civil courts, but this is a less desirable procedure. Courts in at least two states have supported the right of a hospital to

refuse staff appointment to physicians when it was shown that such action was taken without malice.

This is submitted for the information of the House of Delegates.

Respectfully submitted,
A. P. ECHTERNACHT, M.D., *Chairman*
W. L. DOWNING, M.D.
L. S. WENTWORTH, M.D.
F. R. PETERSON, M.D.
F. C. COLEMAN, M.D.
R. R. EDWARDS, M.D.
J. M. BRUNER, M.D.
G. E. MONTGOMERY, M.D.

COMMITTEE ON MEDICAL EDUCATION
AND HOSPITALS

(Referred to the Reference Committee on Miscellaneous Business. For final action of the House of Delegates, see the report of the reference committee.)

On February 16, 1963, the president of the Iowa Medical Society and members of the Committee on Medical Education and Hospitals met in Iowa City with Doctor Robert C. Hardin, dean of the College of Medicine, State University of Iowa, to discuss plans regarding continuing postgraduate medical education programs, as well as other items involving the relationship between the Society and the College of Medicine.

As you know, Dean Hardin is scheduled to speak at 10:00 a.m. on Tuesday before the General Session on the subject "Trends in Medical Education," and we urge all delegates to hear this presentation. Because much of the information Doctor Hardin reviewed with the committee may be included in his talk before the General Session, we will merely highlight his informal discussion, as follows:

1. During past years, medical schools throughout the country have been headed by "professional administrators" which has resulted in various problems. However, within the past two or three years, twenty new medical school deans have been appointed, the majority of whom were previous faculty members.

2. The SUI College of Medicine is a "have" school, and receives greater tax support from the state than most schools in other parts of the country. The Medical School and University Hospitals operate on separate budgets.

3. The main objective of the Medical School is to educate and train practicing physicians. Another important function is to train teaching physicians, and out of 87 medical schools in the United States, Iowa ranks 20th in the training of teachers.

4. The number one problem in the Medical School is the determination of course of study. At Iowa, the courses are discussed in faculty meetings, and departments do not have complete control over what is to be included in the teaching schedule. More emphasis is being placed on individual initiative in learning. The first two years in medical school consist basically of lecture and teaching courses; beginning in the junior year, the student devotes all of his time to ward work, except for attendance at a one-hour clinical conference each day. The clinical conferences are structured so that all important subjects will be covered. In addition, extern programs are being established for students, sometime between the junior and senior year.

5. A new concept in general practice training is being fostered by the SUI College of Medicine—i.e., two-year internships with service in all aspects of medicine. A two-year general practice residency program has been implemented at Broadlawns Hospital in Des Moines, and it is hoped that similar arrangements can be worked out with community hospitals throughout the state.

6. Although SUI has a sizable research budget, it is not dominant. The Medical School must devote time and money to research in order to (a) expose students to research, (b) keep up with the rest of the world in scientific progress, and (c) provide faculty members the opportunity for research. Dean Hardin stressed the fact that faculty members are hired to teach, and research projects are supported only so long as teaching schedules are maintained.

7. Space and teaching facilities in the Basic Science Department at the University are inadequate for the number of students enrolled. The department teaches all students who must complete basic science courses, including 450 medical students, and 2,000 non-medical students (nurses, dentists, dental hygienists, sanitary engineers, undergraduates, etc.). Presently, there are 12,000 students enrolled at SUI, and by 1968 the number may be 18,000. At that time, approximately 5,000 students will be taking course work in the College of Medicine. It is essential that the Basic Science Department be enlarged in order to accommodate the present and anticipated student enrollment.

8. As far as is known, no medical student has had to leave school because of financial difficulties. Twenty-five scholarships have been created, and all except one are financed by contributions from physicians.

In commenting on postgraduate medical education, the dean reported that he hopes to schedule postgraduate courses outside of Iowa City, and he was advised that the Committee and the Iowa Medical Society will be pleased to cooperate in the sponsorship of postgraduate programs for the physicians of Iowa.

The members of the Committee wish to express sincere appreciation to Dean Hardin for his forthright and informative presentation regarding various problems and programs in medical education. It was agreed that meetings of this type should be continued in order to maintain and enhance the existing close relationship between the Medical Society and the College of Medicine.

Also at the February 16 meeting, the committee considered a report prepared by Doctor Howard G. Ellis on actions taken by the House of Delegates of the American Medical Association at its 1962 Interim Session in Los Angeles, relative to medical education and hospitals. A special report on the compensation of interns and residents was submitted by the AMA Council on Medical Education and Hospitals and the Council on Medical Service for information only, with a request for further study, comments or suggestions. The AMA House of Delegates urged that all delegates, hospital staffs and medical societies discuss the report, and forward all suggestions to the two councils in time to influence the form of the report to be presented for action at the June, 1963, AMA Annual Meeting. Our Committee did not make specific recommendations regarding this matter, but it was agreed that extreme care must be exercised in the development of any program to compensate interns and residents, in order to protect the fiscal soundness of hospitals.

The Committee reaffirmed its position regarding intern and resident programs, approved by the IMS Executive Council at its November, 1962 meeting, as follows:

"It is essential to perpetuate the training of physicians in general practice; general internships are of greater importance than stright internships; intern training programs should be centered in community hospitals rather than, or in addition to, university hospitals, intern and resident programs should be based on the number of general practitioners and specialists who will need to be replaced in coming years; and, it would be advisable to develop a master plan for medical education in Iowa.

"Further, the AMA Council on Medical Education and Hospitals does not reflect clearly the current problems in medical education and patient care, and the IMS should support resolutions recommending an equitable representation of physicians in private practice and medical educators on the AMA Council on Medical Education and Hospitals, in an effort to assure physicians not in academic medicine a more powerful voice in establishing policies and programs."

In reference to this action, the Committee recommended that the Executive Council or House of Delegates of the IMS authorize appropriate representatives to support the Society's position at reference committee hearings which will be held at the time of the 1963 Annual Meeting in Atlantic City, June 16-20.

Respectfully submitted,

R. N. LARIMER, M.D., *Chairman*

L. H. JACQUES, M.D.

J. M. LAYTON, M.D.

G. W. HOWE, M.D.

R. D. ROWLEY, M.D.

H. H. KERSTEN, M.D.

J. W. BILLINGSLEY, M.D.

B. T. WHITAKER, M.D.

E. M. SMITH, M.D.

SUBCOMMITTEE ON REHABILITATION

(Referred to the Reference Committee on Miscellaneous Business. For final action of the House of Delegates, see the report of the reference committee.)

This supplemental report of the Subcommittee on Rehabilitation is submitted to review activities since the publication of the HANDBOOK.

The question under consideration was initiated by H. B. Weinberg, M.D., Davenport, in a letter dated April 10, 1962, to the president of the Iowa Medical Society, with the request on behalf of the Iowa Society of Internal Medicine for consideration of an equitable fee schedule for examinations made on Social Security disability applicants. The long delay between the request and ultimate committee action was a matter of referral to the proper committee within the State Society and the difficulty in scheduling a meeting of this Subcommittee. The Subcommittee met with representatives of the Iowa Society of Internal Medicine and the Iowa Division of Vocational Rehabilitation on March 21, 1963, in the offices of the Iowa Medical Society. The following is a summary of the meeting.

The present fee schedule of the Division of Vocational Rehabilitation is in published form and has been approved by the Iowa Medical Society. This fee schedule, in fact, was intended originally for physical disability evaluations for rehabilitation cases, and pro-

vided for expenditure of state-appropriated funds. However, Social Security contracted with the State of Iowa for the establishment of a work-evaluation section to determine total and permanent disability in O.A.S.I. cases, and this contract, approved by the State Board of Public Instruction, called for a fee schedule not to exceed the schedule in use by the Division of Vocational Rehabilitation. The medical expense for Social Security disability examinations is paid from trust funds, in contradistinction to the use of tax money in the program operated by the Division of Vocational Rehabilitation. Thus, the same fee schedule is being utilized for two quite different purposes.

The Iowa Society of Internal Medicine is requesting a more equitable fee for complete examination, development of history and diagnosis of O.A.S.I. cases. These cases, in many instances, are more time consuming and they require a good deal more work and written reporting than do others referred for examination and diagnosis. The internists feel, therefore, that the fee allowed should be comparable with the usual charge in regular practice, and they have recommended that this fee be raised to \$25.00 per examination.

Since any change in the fee schedule of the Division of Vocational Rehabilitation is subject to the approval of the State Division's medical advisory committee, the IMS Subcommittee can do no more than relay its suggestions through the personnel of the DVR, to this advisory committee. Four concrete suggestions for correcting the inequity of the fee schedule were given to Mr. Hunt, director of DVR, to submit to this advisory committee, which will then make recommendations to the Board of the State Department of Public Instruction.

Your Subcommittee on Rehabilitation believes that all parties concerned appreciate the need for a change in the fee schedule. If and when the Subcommittee's recommendations have been approved by the Board of the State Department of Public Instruction, they will be forwarded, at this Subcommittee's request, directly to the IMS Board of Trustees for approval. Unless further deliberations are requested, this concludes the work of the Subcommittee on Rehabilitation as regards this problem.

Respectfully submitted,

C. B. LARSON, M.D., *Chairman*

Reports of Special Committees

COMMITTEE ON INDUSTRIAL HEALTH

(Referred to the Reference Committee on Legislation and Public Relations. For final action by the House of Delegates, see the report of the reference committee.)

Because of legislation introduced in the 60th General Assembly, the Committee on Industrial Health was called into session to review the matter of selection of physician under the present Iowa Workmen's Compensation Law.

H. F. 54 passed the House with a provision as follows: "Except in emergencies, it shall be the prerogative of the employer to select the medical, surgical and hospital services to be furnished."

Several amendments were offered to H. F. 54 which would have given to the employee the right of selection of physician.

After the defeat of these amendments, the Senate

adopted a committee amendment which removed the language from H. F. 54 regarding selection of physician.

The following explanation of the vote was entered in the Senate Journal:

"We voted to remove that language from House File 54 because we were satisfied that the past interpretations of the Workmen's Compensation Law do not require statutory amplification. It is our understanding that the interpretations have allowed the employer to select medical, surgical and hospital services but nonetheless reserving the authority in the Industrial Commissioner for reasonable cause to permit the use of other medical, surgical or hospital services. We believe that this interpretation should remain unchanged."

The House concurred in the bill as passed by the Senate, and the Governor signed H. F. 54.

As a result of this action, the Committee has reviewed its position regarding selection of physician under workmen's compensation, but no change in the law has resulted.

The Committee will continue to study this provision of the law, and if changes are indicated, the Committee's recommendations will be reported to the House of Delegates.

Respectfully submitted,

C. H. JOHNSTON, M.D., *Chairman*

D. W. COUGHLAN, M.D.

C. J. LOHMAN, M.D.

M. G. SANDERS, M.D.

L. A. BLOCK, M.D.

R. D. ACKER, M.D.

N. A. SCHACHT, M.D.

SIDNEY BRODY, M.D.

R. M. WRAY, M.D.

K. J. JUDIESCH, M.D.

OSTEOPATHIC AND MD/DO LIAISON COMMITTEES

(Referred to the Reference Committee on Legislation and Public Relations. For final action by the House of Delegates see the report of the reference committee.)

This report is submitted to bring the House of Delegates up to date on the two main areas of interest of these Committees: (1) the evaluation program, and (2) the Composite Board Bill (S.F. 194 and H.F. 378). It should be read in conjunction with the HANDBOOK report of these Committees.

The status report on the evaluation program as of April 5, 1963, is as follows:

Approved by the IMS Judicial Council—21 Osteopathic Physicians and Surgeons

Approved by the respective county medical societies, but not yet considered by the Judicial Council—53 Osteopathic Physicians and Surgeons

Ninety-day extensions for consideration by the respective county medical societies—8 Osteopathic Physicians and Surgeons

Disapproved by the respective county medical societies, but no action taken by MD/DO Liaison Committee or Judicial Council—12 Osteopathic Physicians and Surgeons

No action by respective county medical societies—14 Osteopathic Physicians and Surgeons

Disapproved by Judicial Council—one

From the above information some conclusions can be drawn. First, a majority of the Osteopathic Physicians and Surgeons eligible for the program have applied for

evaluation. Second, most of the applications acted upon by the county medical societies have been acted upon favorably.

The Composite Board Bill was submitted to the Iowa Legislature on February 14, 1963. Shortly thereafter a group of dissident osteopaths, principally from Polk County, circularized the osteopathic profession in Iowa opposing certain sections of the bill. This group filed four amendments to the bill:

1. An amendment giving the osteopathic member of the board sweeping veto power on any osteopathic issue.

2. An amendment giving osteopathic physicians practice rights they have not earned ("grandfather clause").

3. An amendment increasing osteopathic membership on the board from one to two members.

4. An amendment to eliminate the "State Board of Medical Examiners Fund."

All four of these amendments are opposed by the Iowa Medical Society and the Iowa Society of Osteopathic Physicians and Surgeons. The bill as submitted is the culmination of over five years' work by dedicated members of each profession discussing every facet of every problem involved, consulting with legal counsel, the Board of Medical Examiners, the Board of Osteopathic Examiners, and the State Department of Health. Policy-making bodies of both the IMS and ISOPS approved the bill as submitted. A district-by-district survey made by ISOPS after the dissident osteopathic group circularized their profession showed overwhelming support of the bill in all areas except Polk County and some members in the Mason City area.

On March 14, the MD/DO Liaison Committee together with George Scanlon, M.D., Frank R. Peterson, M.D., and Charles V. Edwards, M.D., met with eight of the dissident osteopaths. Some misunderstandings regarding the bill were cleared up and it was thought that some of the offensive amendments might be withdrawn. However, on March 19, in an unprecedented action, the bill was voted out of committee in the absence of the subcommittee chairman responsible for reporting on the bill. This legislator then filed the above four amendments on March 21. On March 25, the Osteopathic Committee of the IMS met in telephone conference and recommended that the IMS oppose the amendments of the dissident osteopaths and sponsor two new amendments:

1. An amendment to provide for an alternate D.O. board member.

2. An amendment to clarify the right of osteopaths to prescribe and give drugs.

These amendments were approved by the Committee on Legislation and the Board of Medical Examiners and have been filed with the Legislature. Late information on the progress of the bill and the various amendments will be included in the Supplemental Report of the Committee on Legislation. It is the consensus of the Osteopathic Committee that if any of the amendments proposed by the dissident osteopaths is adopted, the IMS should withdraw support from the bill.

The above history of the Composite Board Bill of necessity omits many of the details, the difficulties of reaching conclusions satisfactory to both professions, and the undercurrents of opposition to the bill based possibly on ulterior motives. It must be remembered that the osteopathic profession initiated the pressure for legislative changes. The bill as submitted has strong positive points for each profession. If it should come to

pass that a relatively small group of osteopaths, in defiance to their state organization, can influence legislators and legislation to the extent of killing a progressive bill, then the IMS should certainly take a long look at MD/DO relations in Iowa for the future.

Your Committees request advice and direction from the House of Delegates in two areas:

1. How long should the evaluation program be continued? Should it be modified? Should it be discontinued?

2. In view of the difficulties inherent in the evaluation program and the possible sabotage of the Composite Board Bill, should the MD/DO Liaison Committee be continued?

The Chairman gratefully acknowledges the cooperation and unselfish service of the Committee members. Special thanks again are due Mr. Robert Throckmorton, legal counsel, and Mr. Eldon Huston, staff secretary.

Respectfully submitted,

J. M. RHODES, M.D., *Chairman*

POLICY-EVALUATION COMMITTEE

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates see the report of the reference committee.)

At the Annual Meeting of the Iowa Medical Society in May, 1962, the House of Delegates authorized the Policy-Evaluation Committee to continue its study of the Blue Shield Blue Chip program.

The Committee and a special subcommittee have devoted a year of intensive review to the Blue Chip plan. However, recognizing the importance of one Blue Shield plan to another, and keeping in mind the purpose for which the Policy-Evaluation Committee was created, the committee members thought it appropriate to direct attention to all existing Blue Shield plans, with special emphasis on Blue Chip.

The Committee believes its research of the "usual, customary fee" program is complete, and it also has some comments to offer as to the other plans. Publication of its findings in the April JOURNAL OF THE IOWA MEDICAL SOCIETY enables the entire membership of the Society to share the information that it has accumulated.

In this report, the Policy-Evaluation Committee is asking the House of Delegates to provide an opportunity for the full membership to study the various alternatives and suggestions that it has developed, and it is requesting that final action be deferred until the 1964 Annual Meeting.

If the House of Delegates accepts its recommendation that the membership be given a year to consider its findings, then it hopes that the members of the House will discuss the facts contained in this report with their county constituents, and in addition that special meetings will be arranged at the county and/or district level for the purpose of discussing all aspects of Blue Shield. A 12-month period should be ample for all members to offer their comments.

It is requested that these opinions be channeled through this Committee, so that it may have the benefit of the members' thinking when its final report is assembled for presentation to the House of Delegates next year. The Committee solicits comments from participating physicians, but it also urges non-participating

physicians to respond. The non-participating physicians are asked to make a special effort to convey their thoughts.

When Blue Shield was formed by the Medical Society, it was hoped that all members would become participating physicians. Therefore, one of the primary concerns of the Policy Evaluation Committee is to assist Blue Shield in perfecting plans that will be acceptable to a maximum number of IMS members.

A primary objective of this Committee's report is to apprise the membership of important facts relating to the Blue Chip program, so that physicians can knowledgeably offer their comments on the alternatives which it proposes.

BLUE CHIP

Last August, a special subcommittee of the parent Committee was appointed to explore all aspects of the Blue Chip plan. The chairman of that subcommittee was Dr. Herman J. Smith, of Des Moines, and the other members were Drs. Henning W. Mathiasen, of Council Bluffs, and S. P. Leinbach, of Belmond.

After extensive study from every point of view—including numerous conferences, at which Blue Shield officials, physicians who were disgruntled with the Blue Chip plan, and state insurance officials were present—the subcommittee finally concluded that the problems having to do with Blue Chip stem from a misunderstanding of Blue Chip contract language, specifically in the following paragraphs:

(Paragraph No. 9)

"... the doctors of medicine participating by agreement with Iowa Medical Service will accept as payment in full, within the terms of this contract, the allowances as determined by Iowa Medical Service as being the charges for customary, reasonable, and usual demands for payment of professional services for which benefits are available under this contract.

"A charge will be deemed customary, reasonable and usual if it does not exceed the general level of charges by others who render such services under similar or comparable circumstances within the community in which such charge is incurred."

When development of a Blue Chip plan was authorized by the House of Delegates in 1957, physicians were given the impression that this new plan would pay their "usual, equitable fee (with a reasonable maximum benefit)." Subsequently, however, when the Blue Chip plan was presented to the Iowa Insurance Commissioner for ratification, he required the inclusion of some more restrictive language. It appears that many of the present-day problems with Blue Chip result from the membership's not being informed of these limitations. As a matter of fact, it was not until a number of complaints had been received that the Society became aware of the Insurance Commissioner's rulings. The items about which there have been disagreement involve (1) the language in the previously quoted paragraphs from the Blue Chip contract, which include the terms "by others" and "within the community," and (2) the use of a \$5.00 unit for screening Blue Chip claims.

At one of the Committee's meetings, a representative of the Iowa Insurance Department stated that the Iowa Insurance Commissioner would not approve an "open-end" contract, wherein benefits were not defined, and, which permitted an individual physician to specify his

own "usual, customary and reasonable" fee. He also said that the Commissioner had approved a rate for the Blue Chip program, using as a guide a \$5.00 coefficient when applied to the Iowa Unit Fee Index.

It is because of this latter ruling that Blue Shield has used a \$5.00 unit as the basis for screening Blue Chip claims.

Blue Shield officials report that there are approximately 30 physicians whom they consider to be "chronic offenders"—physicians who repeatedly submit charges in excess of the amount allowable when computed on the basis of the criteria for payment of Blue Shield claims.

It is the opinion of this Committee that under existing circumstances, participating physicians have no choice other than to accept the Blue Chip plan just as it is now being administered—i.e., in accordance with requirements laid down by the Iowa Insurance Commissioner. However, the Committee is hopeful that during the coming year, if the House of Delegates grants the requested extension of time for additional study of the Blue Chip plan, the Medical Society and Blue Shield officials can confer with the Insurance Commissioner, and perhaps can alter or eliminate the objectionable contract language.

It is hoped that the House of Delegates will wait until 1964 before making a choice among the following alternatives, although it is conceivable that it may want to establish an interim position in 1963:

1. Accept the present Blue Chip contract, and the Insurance Commissioner's interpretations of its provisions.
2. Recommend modification of the Blue Chip contract language to permit participating physicians to be compensated for services on the basis of their own "usual, equitable fees (with a reasonable maximum benefit)."
3. Recommend that the Blue Chip plan be withdrawn.
4. Create a high-level service income plan to replace the Blue Chip plan, with an appropriate coefficient when applied to the latest edition of the Iowa Relative Value Index (Green Book).

B300G AND B450 CONTRACTS
FEDERAL EMPLOYEE AND NATIONAL ACCOUNTS

High-Level—B450—\$6,000 service income—family
(\$4.50 per unit, Iowa Unit Fee Index, Gray Book)
Low-Level—B300G—\$4,000 service income—family
(\$3.00 per unit, Iowa Unit Fee Index, Gray Book)

Considerations

1. Should the existing B400 middle-income contract be replaced with the B450?

	Single	Two-Person	Family	Per Unit (Gray Book)
B450	\$4,000	none	\$6,000	\$4.50
B400	3,600	\$4,500	5,400	4.00
	Net Worth \$36,000	Net Worth \$45,000	Net Worth \$54,000	

2. Should the existing B300 contract be replaced by the B300G contract?

	Single	Two-Person	Family	Per Unit (Gray Book)
B300G	\$2,800	none	\$4,000	\$3.00
B300	2,400	\$3,000	3,600	3.00

SENIOR 65 PLAN

Service Income Levels—\$2,000 single; \$3,000 two-person—net worth limits of \$20,000 and \$30,000

Considerations

1. Should this Senior 65 plan that has been in existence since 1959 be replaced by the new Senior Citizens Plan which was offered for the first time in Iowa last fall as a part of a national program (service income levels of \$2,500 and \$4,000)? The latter plan does not include a net worth provision. It is the recommendation of the Policy-Evaluation Committee that if the House of Delegates wishes to modify the old plan to conform more nearly with the new one, its net worth provisions should be maintained, and it should be moved into the Iowa Relative Value Index (Green Book).

A250 CONTRACT

The Policy-Evaluation Committee continues to recommend that this plan be removed from the market as rapidly as possible.

The Committee is informed that Blue Shield is in the process of developing a major-illness policy, and it wishes to encourage Blue Shield in this undertaking. It hopes this coverage will be available in Iowa in the very near future.

At its meeting on August 16, 1962, the Committee recommended that Blue Shield convert all of its plans into the most recent edition of the Iowa Relative Value Index (Green Book) as rapidly as possible. At its March 19, 1963, meeting, the Committee reiterated that recommendation.

CONCLUSION

The Committee wishes to conclude this report by reminding IMS members that Blue Shield has become an important factor in all our practices, and that we owe it to ourselves and to our patients to keep informed about its affairs and to take an active interest in them.

The Committee members hope you will feel a sense of obligation to transmit your thoughts to it, so that it can benefit from them as it continues its deliberations in preparation for 1964.

Respectfully submitted,
W. L. DOWNING, M.D., *Chairman*
O. N. GLESNE, M.D.
C. V. EDWARDS, SR., M.D.
S. P. LEINBACH, M.D.
H. W. MATHIASSEN, M.D.
H. J. SMITH, M.D.
J. K. MACGREGOR, M.D.
C. W. SEIBERT, M.D.
L. F. HILL, M.D.
W. K. HICKS, M.D.
G. M. WYATT, M.D.
G. H. SCANLON, M.D.

PLAN AND SCOPE COMMITTEE

(Referred to the Reference Committee on Articles of Incorporation and By-Laws. For final action by the House of Delegates, see the report of the reference committee.)

In his inaugural address at the 1962 Annual Meeting, Dr. G. H. Scanlon, president, recommended that the Plan and Scope Committee study the structure and activities of the Society's standing and special commit-

tees to determine whether or not they are properly coordinated, and all areas of interest are covered.

In accordance with this directive, the Plan and Scope Committee has studied the structure and the extent to which coordination exists within the committees. However, it believes a general revamping of the complete committee structure would be too ambitious an undertaking in one year; therefore, it has restricted its considerations to the field of public health, including liaison with all state departments.

The Committee believes it is appropriate and timely to recommend to the House of Delegates that it give serious consideration to the approval of necessary amendments to the Articles of Incorporation and By-Laws to permit elimination of the Committee on Public Health, as described in the Articles of Incorporation and By-Laws, and that it be replaced with a Committee on State Departments.

If this Committee is authorized, it would be composed of the chairmen of the various subcommittees that would operate under its jurisdiction.

The president, with the advice of the Board of Trustees, will designate the chairman of the Committee on State Departments and its members. The president and Board will then confer with individual committee chairmen to obtain their suggestions regarding the selection of physicians to serve each subcommittee.

The Iowa Commissioner of Health will be invited to designate liaison representatives to meet with members of the subcommittees that are concerned with matters of public health, and state officials in similar positions would likewise designate liaison representatives—i.e., Board of Social Welfare, Board of Control, Department of Public Safety.

The physicians appointed by the Medical Society on the Committee on State Departments and on the subcommittees will serve one-year terms. The Committee on State Departments will meet as often as necessary to consider problems general in nature, and provide opportunity for the subcommittee chairmen to report on their activities.

The state department liaison representatives will attend meetings on an invitational basis, so as to conserve their time when the subcommittees are considering matters that would not be of particular interest to them.

We believe this new Committee on State Departments arrangement will improve the effectiveness of the subcommittees, and will create an opportunity for truly coordinated action. Since there are health activities being carried out in the various state agencies, this new approach will establish consistency of policy, and the inclusion of representatives of the state departments at meetings of the subcommittees will achieve uniformity of action, which is highly desirable and should be of direct benefit to the people of Iowa.

This approach also provides an opportunity for the Medical Society to serve in an advisory capacity to the several state departments, and to assist with the organization of programs of direct concern to physicians and the public alike. It should give the Medical Society a voice in the determination of policies which are consistent with good medical practice and in the best interest of public health.

The Plan and Scope Committee has presented its recommendations to the IMS Committee on Articles of Incorporation and By-Laws, and the necessary amendments to these documents will have to be approved

by the House of Delegates, if this plan is to be implemented.

The Plan and Scope Committee is studying the desirability of limiting the terms of office of all IMS committee members, but is not prepared at this time to offer such a recommendation. If the Committee on State Departments is successful, perhaps the concept can be broadened next year, and other appropriate recommendations can be presented, simultaneously.

Respectfully submitted,

O. N. GLESNE, M.D., *Chairman*
G. H. SCANLON, M.D.
C. V. EDWARDS, SR., M.D.
S. P. LEINBACH, M.D.
C. E. RADCLIFFE, M.D.
H. E. WICHERN, M.D.
J. G. THOMSEN, M.D.
G. G. YOUNG, M.D.
R. F. BIRGE, M.D.

Under Memorials and Communications, a brief report was presented on a permanent memorial that is being developed in memory of the late Dr. Walter L. Bierring. Also, a letter from the chairman of the Council on Medical Service of the AMA was read to the House of Delegates, expressing appreciation for the work of Dr. Donald C. Conzett, of Dubuque, Iowa, who serves on the Committee on Federal Medical Services of the AMA.

Resolutions

POCAHONTAS COUNTY MEDICAL SOCIETY

NO. 1. ADOPTION AND IMPLEMENTATION OF THE PRINCIPLE OF INDIVIDUAL RESPONSIBILITY IN GOVERNMENT AND PRIVATE HEALTH CARE PROGRAMS

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Medicine needs a workable mechanism by which it can unite its members to reverse socializing trends and preserve the free enterprise system permanently, and

WHEREAS, Under the present "vendor concept" of state and federal programs, government has assumed collective responsibility for those covered, but has legislated that vendors assume responsibility at an administrative and financial discount, while recipients have little or no responsibility, and

WHEREAS, Acceptance of financial remuneration from the government constitutes *de facto* employment and control of physicians by these agencies and bureaus, and

WHEREAS, Private agencies such as health insurance companies and Blue Shield are able to process simple, standard physician-supplied forms incorporating the individual responsibility principle, be it therefore

Resolved, That the Iowa Medical Society reappraise its policy regarding third party intervention between the doctor and the patient, and adopt and implement the philosophy of *individual responsibility* between these two parties, and be it further

Resolved, That the Iowa Medical Society press for abolishment of the *vendor concept* in favor of the *recipient concept* in all government medical programs, and be it further

Resolved, That the Iowa Medical Society take steps to formulate a working plan incorporating standardized forms to implement a state-wide *Individual Responsibility Plan*.

FAYETTE COUNTY MEDICAL SOCIETY

NO. 2. APPROVAL OF FEE SCHEDULES BY COUNTY MEDICAL SOCIETIES

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Resolved, That all fee schedules, relative value schedules, unit fee indexes and any other such schedules are subject to the primary jurisdiction of each county medical society.

NO. 3. LIBERTY AMENDMENT

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Resolved, That the Iowa Medical Society favors the adoption of the Liberty Amendment to the Constitution of the United States of America, as follows:

"Section 1. The government of the United States shall not engage in any business, professional, commercial, financial or industrial enterprise except as specified in the Constitution.

"Section 2. The constitution or laws of any state, or the laws of the United States shall not be subject to the terms of any foreign or domestic agreement which would abrogate this amendment.

"Section 3. The activities of the United States government which violate the intent and purposes of this amendment shall, within a period of three years from the date of the ratification of this amendment, be liquidated and the properties and facilities affected shall be sold.

"Section 4. Three years after the ratification of this amendment the sixteenth article of amendments to the Constitution of the United States shall stand repealed, and thereafter the Congress shall not levy taxes on personal incomes, estates, and/or gifts."

DAVIS COUNTY MEDICAL SOCIETY

NO. 4. PROTECTION OF EMPLOYEE'S FREE CHOICE OF PHYSICIAN IN COMPENSATION CASES

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Section 85.27 of the Iowa Code of 1937 states as follows: "The employer, with notice or knowledge of injury shall furnish reasonable surgical, medical, osteopathic, chiropractic, chiropodial, nursing and hospital services and supplies therefore," and

WHEREAS, The Iowa Code of 1937, Section 85.27 has been interpreted to exclude the right of free choice of surgical, medical, osteopathic, chiropractic, chiropodial, nursing and hospital services, and

WHEREAS, The Iowa State Medical Society is opposed to the corporate practice of medicine and favors the free choice of surgical, medical and hospital services, be it therefore

Resolved, That Section 85.27 of the Iowa Code (1937) be amended by the addition of the following sentence: "The employee shall have the right of free choice of surgical, medical, osteopathic, chiropractic, chiropodial, nursing and hospital services."

BLACK HAWK COUNTY MEDICAL SOCIETY

NO. 5. REGULATION OF HEALTH STUDIOS, REDUCING SALONS, ET CETERA

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Certain "health studios," "reducing salons," etc. are bilking patients by (1) publishing false and misleading advertisements and claims; (2) using promotion gimmicks such as a reduced rate for the first 100 women who join a plan, and telling each prospective customer that she is number 99 and must sign at once if she is to get the special rate; (3) requiring that the customer sign a card that is not merely an enrollment but is actually a promissory note to a finance company; (4) employing untrained and unqualified help; (5) giving unwise and sometimes contradictory advice; (6) making collections in advance without providing surety that the firm will actually render the proffered services; and (7) advising clients to quit taking medicines prescribed for them by their doctors, and urging them, instead, to buy their diet pills, protein pills, etc. at exorbitant prices, and

WHEREAS, These same concerns have falsely claimed that doctors of medicine are cooperating with them and have referred patients to them, when actually the physicians named have previously been unaware of the firms' existence, and

WHEREAS, In California and other states recent exposures have revealed shocking practices to exist in the field of marriage and family counseling, and

WHEREAS, At the present time there are no controls over such firms, agencies or practitioners in the State of Iowa, and

WHEREAS, Such standards, controls or licensing would serve to protect the health as well as the economic interests of the general public, now therefore be it

Resolved, That the Iowa Medical Society formulate and endeavor to secure the enactment by the General Assembly of a law for the control of such firms, agencies and so-called experts, and that such a measure should include the requirement that each such individual or firm post a surety bond to guarantee fulfillment of contracts.

FAYETTE COUNTY MEDICAL SOCIETY

NO. 6. REPUDIATION OF RELATIVE VALUE SCHEDULES

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The members of the Fayette County Medical Society can informally visit each other during hospital rounds, staff meetings, county meetings, etc., and

WHEREAS, Said members can discuss among themselves the economic phase of medical practice, including the relative values of various procedures under various individual circumstances and conditions, and

WHEREAS, The members of the Fayette County Medical Society do not feel that they are qualified as a group to determine, prior to the performance of the service, the relative value of the individual service rendered by any of the individual physician members, but rather said Fayette County Medical Society members do feel that each individual physician should be allowed, yea required, to set his own value to his own patient for his own services, without interference by organized medicine unless the physician's fee appears to be grossly unreasonable to either the patient or the physician, and

WHEREAS, The members of the Fayette County Medical Society do not feel that any other group of mortals, no matter how well-intentioned nor how well-devoted to their task, can ever arrive at a decision concerning a schedule of relative values that would be fitting and proper for all members of the Fayette County Medical Society at all times, and

WHEREAS, The Iowa Medical Society in the past has published a Relative Value Schedule and a Unit Fee Index wherein certain values are attached to certain procedures, but nowhere has any publication of said Iowa Medical Society ever specified exactly what constitutes the performance of each of those procedures, nor what level of skill, competence, judgment and care are necessary in said performance to merit the scheduled value attached to it, and

WHEREAS, The true history of relative value schedules and unit fee indexes in the State of Iowa has clearly shown that these schedules are not purely voluntary, as they were intended to be, but rather are expropriated by various organizations, notably Blue Shield and the State Department of Social Welfare, and set up by them as exact and dogmatic fee schedules which are used and applied against all physicians in the state, regardless of skill, competence, judgment, care or even interest in the case, and

WHEREAS, The members of the Fayette County Medical Society can see no need for a relative value schedule, which at the same time they do see a real and present danger of regimentation and socialization of the physician, with the destruction of private practice as a direct result of the implementation of such a schedule, now therefore be it

Resolved, That the Fayette County Medical Society hereby repudiates and disavows any connection or association with any and all relative value schedules, unit fee indexes or other such schedules by whatever name called, and the members of the Fayette County Medical Society are hereby declared free of any encumbrances which might be imposed by any such schedules.

Adopted September 11, 1962.

JEFFERSON COUNTY MEDICAL SOCIETY

NO. 7. REPUDIATION OF ALL FEE SCHEDULES AND INDEXES

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

(In support of the Fayette County Medical Society's resolution concerning the repudiation of relative value schedules.)

WHEREAS, Members of the Jefferson County Medical Society have met informally and also as a formal Society to discuss relative value schedules and unit fee indexes which have been forced upon them in the last few years by the State

Department of Social Welfare, Blue Shield and other insurance companies, and

WHEREAS, Members of the Jefferson County Medical Society feel that these organizations have unjustly expropriated these various relative value schedules and unit fee indexes which had been set up by our State Medical Society from such information as it had obtained from doctors elsewhere (though the Jefferson County Medical Society has never contributed any of it), and

WHEREAS, Such relative value schedules and unit fees were intended to have the status of minimum or average indexes or schedules, various organizations—notably Blue Shield and the State Department of Social Welfare—have chosen to regard them as maximum fee schedules, and

WHEREAS, Any organization or medical society other than the Jefferson County Medical Society has no reason or right to receive information concerning the fees or relative values of various procedures used by the members of the Jefferson County Medical Society, now therefore be it

Resolved, That the Jefferson County Medical Society supports the Fayette County Medical Society in the resolution it adopted on September 11, 1962, and its introduction at the Iowa Medical Society meeting in the spring of 1963.

FAYETTE COUNTY MEDICAL SOCIETY

NO. 8. LIBERTY AMENDMENT

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The Iowa Medical Society is opposed to creeping inflation and the increasing power of the bureaucracy of the federal government, and

WHEREAS, The proposed Liberty Amendment appears to be a possible answer to the problem of how to restore individual liberty to the American people, now therefore be it

Resolved, That the Iowa Medical Society favors a program of education for its members concerning the content and meaning of the proposed Liberty Amendment to the Constitution of the United States, and the officers of the Iowa Medical Society are hereby empowered to take whatever steps are necessary to carry out such an educational program.

Adopted September 11, 1962.

NO. 9. FEDERAL SUBSIDIES

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The Fayette County Medical Society recognizes that dependence upon federal government subsidies undermines the economic and political independence of the State of Iowa, and

WHEREAS, The motto of the State of Iowa is: "Our Liberties We Prize and Our Rights We Will Maintain," and

WHEREAS, The Tenth Amendment to the Constitution of the United States of America says: "The powers not delegated to the United States by the Constitution, nor prohibited by it to the states, are reserved to the states respectively, or to the people," now therefore be it

Resolved, By the Fayette County Medical Society that the best interests of the citizens of the State of Iowa will be served by a bold program of independent action by the people of Iowa to take care of their own problems, without shifting responsibility to the federal government, and without asking for federal subsidy or dole.

Adopted September 11, 1962.

NO. 10. INDIVIDUAL RESPONSIBILITY PLAN

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The Fayette County Medical Society believes in the principle of individual responsibility, and

WHEREAS, The Fayette County Medical Society believes that the physician can serve his patient best when the physician is free from outside control or determining influence over his economic relationship with his patient, now therefore be it

Resolved, That the Fayette County Medical Society approves

and supports the resolution of the Pocahontas County Medical Society, which was introduced as Resolution No. 21 at the annual meeting of the Iowa Medical Society in May, 1962, calling for the adoption of a state-wide individual responsibility plan, with the abolition of the vendor concept in all government medical programs.

Adopted September 11, 1962.

MARION COUNTY MEDICAL SOCIETY

NO. 11 VEXATIOUS LITIGATION

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The Iowa Medical Society at its 1962 annual meeting approved the Marion County resolution, proposing legislation to deter Vexatious Litigation and also that the resolution be sent on to the American Medical Association as a memorandum, and

WHEREAS, The intent of the Marion County delegate was that the resolution be sent on to the AMA delegates for their approval, so that any other state, through their own legislature, by the enactment of the proposed law could deter Vexatious Litigation, and

WHEREAS, For the information of the new delegates, the object of the Marion County resolution was to deter Vexatious Litigation, or Nuisance Suits, by a change in our state law, whereby the losing party in a law suit would pay all expenses, including the fees of the winning party's attorney, and in this proposed legislation there would be a provision so that the poor man could sue if he had a legitimate case, and there would also be some regulation of the winning party's attorney fee (although the winning party's attorney could charge his client an additional fee). Such a law is in effect in most civil countries in Europe, and in a few instances under certain conditions, in our state and federal laws, and

WHEREAS, To properly write a bill to introduce such legislation in a state would require some research by those who have no conflict of interest even though indirectly, with the proposed legislation, and

WHEREAS, The proposed legislation if enacted in any state would cut down Vexatious Litigation or Nuisance Suits immensely, not only against the medical profession, but against all the people, therefore be it

Resolved, That the Iowa Medical Society forward a similar resolution on Vexatious Litigation, as was approved by the Iowa Medical Society delegates in 1962, to the AMA delegates for their approval, and be it further

Resolved, If this resolution is approved by the AMA delegates, that they request the president of the AMA to appoint a committee, whose interest is not in conflict with the proposed legislation, to write a model bill for this proposed legislation, which any state medical society, another state organization or even an individual of any state could introduce as a bill for their state legislature to act upon.

CERRO GORDO COUNTY MEDICAL SOCIETY

NO. 12 IMPLEMENTATION OF MEDICAL AID TO THE AGED IN IOWA

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Resolved, That if a vendor payment type program, with or without a fiscal agent, evolves in the development of the medical aid to the aged program in the State of Iowa, the Iowa Medical Society recommends to its members that they not accept fees from a state department for professional services rendered to patients who are receiving medical aid under this program.

POCAHONTAS COUNTY MEDICAL SOCIETY

NO. 13 IOWA MEDICAL SOCIETY-BLUE SHIELD RELATIONS

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The close relationship between the Iowa Medical Society and its offspring, Blue Shield, has shown some signs of deterioration, and

WHEREAS, Certain actions of Blue Shield indicate a failure

to understand and/or be guided by the decisions of the policy-making bodies of IMS, and

WHEREAS, The impression is created by some Blue Cross-Blue Shield enrollment representatives that they do not always fully appreciate and understand the reasons for and necessity of a close relationship between Blue Shield and the practicing physician, and

WHEREAS, The Pocahontas County Medical Society has defended and supported Blue Shield for many years, and therefore deplores the above-named tendencies, be it therefore

Resolved, That the Iowa Medical Society and Blue Shield rededicate themselves to their mutual aims, and that Blue Shield respect the decisions of the policy-making bodies of the IMS in regard to all new contracts and changes in old contracts, and be it further

Resolved, That Blue Shield improve its liaison with the practicing physician, whether participating or non-participating, and be it further

Resolved, That Blue Shield give cognizance to the fact that the full service principle will be tolerated by physicians only when there is parity between fees and full service income levels.

Adopted March 28, 1963.

SCOTT COUNTY MEDICAL SOCIETY

NO. 14 BLUE SHIELD (BLUE CHIP)

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The Iowa Medical Service has for several years offered, and at present still offers, a policy which it calls "Blue Chip," and

WHEREAS, This so-called "Blue Chip" policy is advertised as having "no limitation on payment when charges are locally usual, customary and reasonable," and

WHEREAS, In actual fact the Iowa Medical Service has consistently rejected charges which are locally usual, customary and reasonable, and substituted for it the same fee schedule used for its other policies but based on a \$5.00 unit, and

WHEREAS, Such misdirection is not fitting to the medical profession, and has no place in the Iowa Medical Society, therefore be it

Resolved, That the Iowa Medical Society ask the Iowa Medical Service to cease calling this policy "Blue Chip" and to cease representing it as a policy in which there is no limitation of payment (even when qualified by the statement "when charges are locally usual, customary and reasonable").

SCOTT COUNTY MEDICAL SOCIETY

NO. 15 DEDUCTIBLE AND CO-INSURANCE PROPOSAL

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, It is our opinion that most present sickness insurance coverage operates in such a manner as to encourage unnecessary use of hospital facilities and thereby constantly increases the cost of premiums, and

WHEREAS, It is our opinion that the present Blue Shield policies offering full coverage of professional fees can only operate soundly with a degree of rigid control of the participating physician which is repugnant to the individual practitioner, and

WHEREAS, We do not believe the great majority of the public wish "free" medical care but rather wish to give a reasonable degree of predictability to their medical requirement, and

WHEREAS, One of the major original purposes of Blue Shield was to be operated in the area of medical services not covered by companies operating for profit, and

WHEREAS, The organization of Blue Shield is admirably suited to experimentation and pioneer endeavors in the field of sickness insurance, therefore be it

Resolved, That the Iowa Medical Society request the Iowa Medical Service and the Iowa Hospital Service to develop a policy embodying the following principles:

1. \$50.00 deductible per family per policy year.
2. 20 per cent co-insurance of the next \$1,000.00 per family per policy year, with 80 per cent coverage of all hospital expense and 80 per cent coverage of an average and usual fee, after satisfaction of the deductible amount; such coverage to apply to diagnostic laboratory, radiologic procedures, and professional services in the physician's office as well as in the hospital.
3. Complete coverage after satisfaction of the principles embodied in number two (2) above; thus leaving a maximum predictable expense of \$250.00 per family per policy year, in addition to the premium.

SCOTT COUNTY MEDICAL SOCIETY

NO. 16 BLUE CROSS-BLUE SHIELD COVERAGE FOR WIDOWS AND ORPHANS OF DOCTORS

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The doctors have always attempted to care for their loved ones medically as well as financially, and

WHEREAS, It is humane that all doctors' widows and orphans should be privileged to continue to receive good medical and hospital coverage, be it

Resolved, That the Iowa Medical Society insist that Blue Shield and Blue Cross extend their insurance coverage to the widows and orphans of doctors in the Iowa Medical Society program.

FAYETTE COUNTY MEDICAL SOCIETY

NO. 17 METHOD OF NOMINATING AND ELECTING BLUE SHIELD BOARD MEMBERS

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Blue Shield in Iowa came into being nearly 20 years ago as "the doctors' plan" only after the endorsement and sponsorship of the House of Delegates of the Iowa Medical Society, and

WHEREAS, Blue Shield has been repeatedly advertised to the general public as "the doctors' plan," and

WHEREAS, The vast majority of the eligible physicians in Iowa are members of the Iowa Medical Society and the vast majority of these are participating physicians in Blue Shield and continue to endorse, sponsor and, in effect, subsidize Blue Shield, and

WHEREAS, In view of the above the physicians of Iowa both as members of the sponsoring Iowa Medical Society and as participating physicians in Blue Shield have every right to expect the affairs of Blue Shield to be conducted in a democratic fashion in accordance with the wishes of the sponsoring medical profession, therefore be it

Resolved, That the House of Delegates of the Iowa Medical Society go on record as firmly recommending that the method of nominating and electing members of the Blue Shield Board of Directors be changed so as to enable the doctors of Iowa to have a greater democratic and direct voice and vote in said nominating and election processes than at present and that, specifically, Blue Shield be urged to adopt a similar or identical process as utilized by the Iowa Medical Society in its nomination and election of officers, and be it further

Resolved, That unless there be speedy indications that a proper relationship between the sponsoring Iowa Medical Society and Blue Shield can be and will be established and maintained this House of Delegates go on record as firmly recommending appropriate action to change the "full service" concept of Blue Shield to the "indemnity contract" concept.

Adopted by Fayette County Medical Society, March 27, 1963.

POLK COUNTY MEDICAL SOCIETY

NO. 18 RELATIVE VALUE PUBLICATIONS

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The Iowa Medical Society presently has three books in use as fee schedules or relative value schedules: (1) green book—Iowa Relative Value Index, (2) grey book—Iowa Unit Fee Index, (3) red book—Iowa Relative Value Schedule; and Iowa Medical Service publishes one book—yellow book—Schedule of Service Benefits; and

WHEREAS, These books are all used by various organizations in various ways; i.e., green book is presently used only by doctors; grey book is used by the State Welfare and by certain Blue Shield plans; red book is used by certain Blue Shield plans and the yellow book by still other Blue Shield plans. Different ones are used by other insurance companies as guides to determine fees in Iowa; and

WHEREAS, The relative values in these different books are often the same—especially in the field of surgery but there is great variation in other areas—especially in medical areas; and

WHEREAS, The State Welfare Board has answered complaints of low fees of certain medical procedures by stating that first the Iowa Medical Society must change the unit fee index. Particular attention was paid to house calls in this matter, now, therefore, be it

Resolved, That to avoid so much confusion the Iowa Medical Society adopt one of these four books preferably the most recent green book and acknowledge this book alone and refuse to acknowledge the other fee schedules; and be it further

Resolved, That all insurance companies in Iowa, the various welfare boards and other agencies interested in third party medicine be notified that the Iowa Medical Society has adopted and will acknowledge only the Iowa Relative Value Index (green book).

WEBSTER COUNTY MEDICAL SOCIETY

NO. 19 QUALIFICATIONS FOR NURSING INSTRUCTORS

(Referred to the Reference Committee on Miscellaneous Business for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Difficulty is being experienced by certain excellent Iowa schools of nursing in obtaining adequate numbers of faculty members, and

WHEREAS, At least a part of this difficulty is a result of arbitrary standards now required for these positions, and

WHEREAS, certain otherwise well-qualified nursing instructors are now excluded from these positions, now therefore be it

Resolved, That the House of Delegates of the Iowa Medical Society request the Iowa Nursing Association and appropriate regulatory agencies of the Government of the State of Iowa to take appropriate action to make the formal qualifications for nursing instructors sufficiently elastic to provide adequate numbers of well-qualified instructors for nursing schools in this State.

LIFE AND ASSOCIATE MEMBERSHIPS

LIFE MEMBERSHIP RECOMMENDED ON THE BASIS OF
50 YEARS' PRACTICE AND 30 YEARS' MEMBERSHIP

Benton County	Clyde E. Thomas, Keystone
Black Hawk County	Carl L. Bradley, Newhall Albert J. Joynt, Waterloo Ralph E. Russell, Waterloo
Buena Vista County	Thomas F. Thornton, Sr., Waterloo
Cerro Gordo County	Thomas R. Campbell, Sioux Rapids
Lee County	Ezra L. Wurtzer, Clear Lake
Pottawattamie County	Jesse L. Saar, Donnellson William E. Ash, Council Bluffs
Wapello County	Gerald V. Caughlan, Council Bluffs Harold A. Spilman, Ottumwa
Wayne County	Thomas L. Vineyard, Ottumwa
Wright County	David R. Ingraham, Sewal John R. Christensen, Eagle Grove

ASSOCIATE MEMBERSHIP RECOMMENDED ON THE BASIS
OF RETIREMENT OR INCAPACITATION

Buena Vista County	Harold E. Farnsworth, Storm Lake
Polk County	Harold C. Black, Des Moines Neils M. Hanson, Des Moines Sarah U. Wykoff, Des Moines

A nomination for the outstanding Iowa General Practitioner of the Year Award was received.

It was announced that reference committees would begin their hearings 30 minutes following adjournment of the House of Delegates, which established the time of 4:00 p.m.

Reference committee chairmen were invited to meet with the speaker immediately following adjournment of the House to receive their final instructions.

Delegates were informed that the House of Delegates would convene Wednesday morning, April 10, at 8:00 a.m., in the Grand Ballroom of the Savery Hotel. They were asked to report promptly.

The House was adjourned at 3:25 p.m.

WEDNESDAY SESSION, APRIL 10, 1963

The Wednesday session of the House of Delegates was called to order at 8:00 a.m. The House approved the taking of attendance by registration cards. There were 110 delegates, 12 voting alternates and 14 ex-officio members present.

County	Delegate	Alternate
Adair		
Adams	J. C. Nolan	
Allamakee	R. H. Palmer	
Appanoose	E. A. Larsen	
Audubon		
Benton	J. E. Blumgren	
Black Hawk	R. C. Miller F. G. Loomis G. D. Phelps C. D. Ellyson T. L. Trunnell E. E. Linder V. H. Carstensen R. L. Knipfer P. W. Brecher F. A. Rolfs C. R. Wilson	H. L. Skinner
Boone		
Bremer		
Buchanan		
Buena Vista		
Butler		
Calhoun		
Carroll		
Cass	J. D. Weresh	
Cedar		L. J. Kirkham
Cerro Gordo	G. J. Sartor J. F. Paulson	D. C. Koser
Cherokee		
Chickasaw	D. L. Trefz	
Clarke	G. I. Armitage	
Clay	D. H. King	
Clayton		
Clinton	H. A. Amesbury M. E. Barrent	
Crawford		
Dallas-Guthrie	W. A. Castles R. J. Peterson J. R. Scheibe E. E. Gamet R. E. Clark F. G. Ober J. L. Saar	R. J. Coble
Davis		
Decatur		
Delaware		
Des Moines		
Dickinson		
Dubuque	D. F. Ward K. K. Hazlet D. A. Howell J. P. Clark R. S. Jaggard R. M. Nielsen	
Emmet		
Fayette		
Floyd		
Franklin		
Fremont		
Greene		H. V. Kahler
Grundy		
Hamilton	G. A. Paschal	
Hancock-Winnebag	J. R. Camp J. T. Mangan J. J. Shurts J. W. Barnes	
Hardin		
Harrison		
Henry		
Howard	P. A. Nierling	
Humboldt	I. T. Schultz	
Ida		
Iowa	D. F. Miller	
Jackson		
Jasper	J. W. Billingsley	K. H. Strong
Jefferson		
Johnson	C. P. Goplerud	C. E. Radcliffe
	J. M. Layton C. E. Schrock K. R. Cross	G. W. Howe
	C. R. Eicher K. J. Judiesch L. D. Caraway R. G. Gillett M. G. Bourne L. C. Pumphrey J. W. Saar J. J. Redmond J. J. Keith R. M. Chapman	
Jones		
Keokuk		
Kossuth		
Lee		
Linn		
Louisa		
Lucas	T. C. White	
Lyon	G. D. Bullock	
Madison	J. E. Evans	
Mahaska	G. S. Atkinson	
Marion	Peter Van Zante	
Marshall	O. D. Wolfe L. O. Goodman	M. L. Scheffel
Mills		
Mitchell		
Monona		
Monroe		

Delegate	County	Alternate
Montgomery	Oscar Alden	
Muscatine	C. P. Phillips	
O'Brien	J. C. Peterson	
Osceola		
Page	G. H. Powers	
Palo Alto		
Plymouth		
Pocahontas		
Polk	J. M. Rhodes	
	J. T. Bakody	
	E. T. Burke	
	D. F. Crowley, Jr.	
	C. W. Losh, Jr.	
	N. W. Irving, Jr.	
	M. T. Bates	
	A. N. Smith	
	R. B. Stickler	
	P. K. Hughes	
	J. T. McMillan	
	J. H. Kelley	
	H. E. Wichern	
Pottawattamie	C. V. Edwards, Jr.	
	F. E. Marsh, Jr.	
	F. N. Weber	
Poweshiek		
Ringgold	D. E. Mitchell	
Sac	John Hubiak	
Scott	Erling Larson	
	J. H. Sunderbruch	
	J. F. Bishop	
	W. S. Pheteplice	
Shelby	J. H. Spearing	
Sioux	M. O. Larson	
Story	G. E. Montgomery	
	J. D. Conner	
Tama	A. J. Havlik	
Union-Taylor	D. L. York	
	R. W. Boulden	
Van Buren		
Wapello	K. E. Lister	P. W. Scott
Warren	Amalgamated with Polk County	
Washington	G. J. Nemmers	
Wayne	C. N. Hyatt	P. M. Kersten
Webster		
Winnebiek	J. F. Kelly	
Woodbury	R. M. Dahlquist	
	J. A. McFarlane	
	P. M. Cmeyla	
	R. C. Larimer	
	C. L. Beye	
Worth		W. G. McAllister
Wright	C. P. Hawkins	

LIAISON DELEGATES

H. W. Mathiasen J. W. Billingsley

OFFICERS PRESENT AS EX-OFFICIO
MEMBERS OF THE HOUSE

G. H. Scanlon	S. P. Leinbach	E. M. Smith
C. V. Edwards, Sr.	C. W. Seibert	Fred Sternagel
G. E. McFarland	J. W. Ferguson	W. D. Abbott
R. F. Birge	L. W. Swanson	O. N. Glesne
L. J. Halpin	H. J. Smith	

Minutes of the April 7 meeting of the House of Delegates were read and approved. The election of officers followed, and the following physicians were chosen:

President-Elect	O. D. Wolfe, M.D., Marshalltown
Vice-President	Oscar Alden, M.D., Red Oak
Trustee	J. H. Sunderbruch, M.D., Davenport
Speaker of the House	*L. J. Halpin, M.D., Cedar Rapids
Vice Speaker of the House	*P. M. Kersten, M.D., Fort Dodge
Secretary	*R. F. Birge, M.D., Des Moines
Treasurer	V. L. Schlaser, M.D., Des Moines
Councilor, 3rd District	J. L. Powers, M.D., Estherville
Councilor, 5th District	N. W. Irving, Jr., M.D., Des Moines
Councilor, 8th District	*J. H. Sunderbruch, M.D., Davenport
Councilor, 10th District	*E. E. Gamet, M.D., Lamoni
AMA Delegate	*D. F. Ward, M.D., Dubuque
AMA Alternate Delegate	*E. M. Smith, M.D., Eagle Grove
Liaison Delegates to IMS (2)	C. P. Hawkins, M.D., Clarion
	R. C. Larimer, M.D., Sioux City

(The AMA delegate and alternate start their new terms in January, 1964.)

Reference Committee Reports

The following reference committee reports were approved by the House of Delegates.

INSURANCE AND MEDICAL SERVICE

Your Reference Committee on Insurance and Medical Service was given the responsibility of considering the following items referred to it by the House of Delegates. Your Reference Committee met in open session on Sunday afternoon to hear opinions on these several items from all interested parties.

1. Resolutions 1 and 10, introduced by Pocahontas County Medical Society and Fayette County Medical Society, on the subject of Individual Responsibility. Your Reference Committee feels strongly that this plan probably has some merit and recommends to the House that these Resolutions be referred to the Subcommittee on Prepayment Medical Care for further evaluation on how this plan has been working in other parts of the country and suggests it report back to the House at the spring meeting of the IMS in 1964.

Mr. Speaker, I move adoption of this portion of the report.

2. Resolutions 2, 6 and 7, introduced by Fayette County Medical Society and Jefferson County Medical Society, on the subject of Relative Value Schedules. Your Reference Committee believes it is inherent in the structure of the Medical Society that any county society or individual physician may accept or reject a relative value schedule approved by the State Medical Society. In truth, the Relative Value Index states with clarity that it is not a fee schedule and physician compliance is optional. Therefore, no action is necessary on these three Resolutions.

Mr. Speaker, I move adoption of this portion of the report.

3. Resolution 18, introduced by Polk County Medical Society, regarding relative value schedules. Your Reference Committee heartily endorses Resolution 18 and recommends that all insurance companies in Iowa, the various welfare boards and other agencies concerned with third party medicine, be notified that the Iowa Medical Society has adopted and will acknowledge only the Iowa Relative Value Index (Green Book). Your Reference Committee recommends that the latest Iowa Relative Value Index (Green Book) should be implemented as rapidly as possible in its entirety.

This action, if adopted by the House of Delegates, automatically rescinds any previous Relative Value Indexes.

Mr. Speaker, I move adoption of this portion of the report.

4. Resolution 14, introduced by Scott County Medical Society, on the subject of Blue Shield (Blue Chip). Your Reference Committee recommends no action since the Blue Chip Program will be taken up in subsequent recommendations.

Mr. Speaker, I move adoption of this portion of the report.

5. Resolution 15, introduced by Scott County Medical Society, on the subject of Deductible and Co-Insurance. Your Reference Committee endorses in theory the principle of co-insurance and/or deductible in combination as a measure to reduce abuses of overutilization and recommends that the Scott County Resolution be referred to the Subcommittee on Prepayment Medical Care to study the feasibility of this type of plan.

* Reelected.

Mr. Speaker, I move adoption of this portion of the report.

6. Resolution 16, introduced by Scott County Medical Society, concerning Blue Cross-Blue Shield Coverage for Widows and Orphans of Doctors. Your Reference Committee favors the Resolution and suggests that this matter be referred to the Committee on Group Insurance for study and any necessary action.

Mr. Speaker, I move adoption of this portion of the report.

7. Resolution 13, introduced by Pocahontas County Medical Society, on the subject of Iowa Medical Society-Blue Shield Relations. Your Reference Committee feels the subject matter of this Resolution is covered by the Board of Trustees Supplemental Report "D" and therefore recommends no action.

Mr. Speaker, I move adoption of this portion of the report.

8. Resolution 17, introduced by Fayette County Medical Society, concerning the Method of Nominating and Electing Blue Shield Board members. Your Reference Committee feels this Resolution should be rejected as we believe the doctors of Iowa do have a democratic and direct vote in electing members of the Blue Shield Board, both from their own district and for the members at large if the right is exercised. In addition, relationships between the IMS and Blue Shield are being given increasing attention as stated in Supplemental Report "D" of the Board of Trustees.

Mr. Speaker, I move adoption of this portion of the report.

9. Supplemental Report of the IMS Policy-Evaluation Committee. In considering the report of the Policy-Evaluation Committee, your Reference Committee recommends acceptance of the report and further that the suggestions of the Policy-Evaluation Committee be carried out as follows: Your Reference Committee recommends that the membership be given a year to consider its findings and that the members of the House discuss the facts contained in this report with their county constituents. In addition, the Reference Committee recommends that special meetings be arranged by each county society with Iowa Medical Society and Blue Shield representatives for the purpose of discussing all aspects of Blue Shield as contained in the Policy-Evaluation Committee Report. A twelve-month period should be ample for all members to offer their comments. It is recommended that opinions and actions be channeled through the Policy-Evaluation Committee so that it may have the benefit of the members' thinking when its final report is assembled for presentation to the House of Delegates next year. Comments should be solicited from participating physicians, but we also urge non-participating physicians to respond. Your Reference Committee recommends that the Policy-Evaluation Committee come up with firm recommendations regarding Blue Shield offerings to present to the 1964 session of the House of Delegates.

Mr. Speaker, I move adoption of this portion of the report.

Your Reference Committee wishes to comment further on one portion of the Policy-Evaluation Committee Report. That section of the report concerning contracts B300G and B450 for Federal Employees and National Accounts suggests that this program could replace the existing B300 and B400 contracts. We understand that at the present time, the B300G and B450 contracts are not being promoted for sale to individuals. Your Reference Committee is of the opinion that the House of

Delegates, when it approved in 1961 the higher income levels which permitted the development of these contracts, intended that this sale be limited to federal employees and national accounts. It has been pointed out that legally the sale of any contract cannot be limited and although the B300G and B450 contracts are not at present being promoted publicly, they are available to other than national accounts and federal employees. Your Reference Committee recommends that this policy of no public promotion be maintained until a year's study at the county level on the relationship of these four Blue Shield policies—B300, B300G, B400 and B450—is completed.

Mr. Speaker, I recommend adoption of this portion of the report.

10. Supplemental Report "D" of the Board of Trustees. Your Reference Committee agrees with the tenor of the report by the Board of Trustees and recommends adoption of the following specific points:

(1) Because of the innovations that have taken place since the Blue Chip Plan was originally authorized, the Reference Committee feels that members of the House of Delegates and the full membership should be apprised of any contract modifications or interpretations. Your Reference Committee points out that this will occur if the recommendations regarding the Policy-Evaluation Committee are adopted.

Mr. Speaker, I move adoption of this portion of the report.

(2) In the interest of mutual relations, we recommend that when it becomes necessary to alter a Blue Shield program to conform to insurance regulations or legal requirements after it has been approved by a policy-making body of the Medical Society, either the House of Delegates or Executive Council should be provided opportunity to reconsider the effect these modifications or interpretations will have on the individual physician's practice before a new plan is offered to the public.

Mr. Speaker, I move adoption of this portion of the report.

(3) That in the future, Medical Society and Blue Shield representatives make every effort to confer jointly with appropriate state insurance officials to ascertain requirements involving specific plans before they are submitted to a policy-making body for approval. We feel it is essential that the membership have the benefit of *full information* on any proposed program at the time action is required.

Mr. Speaker, I move adoption of this portion of the report.

(4) We recommend that regular meetings be scheduled, at least on a quarterly basis between the Board of Trustees of the IMS, and appropriate Blue Shield representatives. It is the feeling of the Reference Committee that if these sessions, which have been held during 1962-1963, had occurred in previous years, present misunderstandings would have been less likely to occur.

Mr. Speaker, I move adoption of this portion of the report.

Your Reference Committee would like to commend the Policy-Evaluation Committee and the Board of Trustees for the manner in which their respective directives have been carried out and the informative reports submitted to the House of Delegates.

Mr. Speaker, I move adoption of this portion of the report.

Mr. Speaker, I move adoption of this report as a whole as amended.

Respectfully submitted,
C. E. RADCLIFFE, M.D., *Chairman*
L. D. CARAWAY, M.D.
A. J. HAVLIK, M.D.
C. N. HYATT, M.D.
R. H. PALMER, M.D.

LEGISLATION AND PUBLIC RELATIONS

Your Reference Committee on Legislation and Public Relations held open hearings on Sunday, April 7. Further deliberations took place in executive session, with the Committee referring to reports and additional information supplied by previous committees and legal counsel. The following items were referred to this Committee by the House of Delegates:

Resolutions 3, 4, 5, 8, 9, 11 and 12

Supplemental Reports of:

Committee on Industrial Health
Osteopathic and MD/DO Liaison Committees
Committee on Legislation

Committee considerations of the various resolutions and reports are presented in this report in the same order in which they were discussed in open hearing and executive session.

RESOLUTION 5 FROM BLACK HAWK COUNTY

It appeared to the Reference Committee that the complaint regarding health studios, salons, etc., is to a great extent a matter of business ethics rather than of medical practice. Control of such practices should be sought through the efforts of the business community in which they occur. Local county societies having such difficulties would do well to secure the fullest cooperation of the business community in resolving the problem. Your Reference Committee recommends that no action be taken on this resolution.

Mr. Speaker, I move the adoption of this portion of the report.

RESOLUTION 11 FROM MARION COUNTY

After considerable study and discussion, it was felt that the substance of the resolution on vexatious litigation had been approved by the 1962 House of Delegates, but that the resolution did not carry out the intent of the sponsors. Therefore, to clarify this intent, the Reference Committee recommends the amendment of the last two paragraphs of the resolution as follows:

Resolved, That the Iowa Medical Society forward a resolution on vexatious litigation, stating the substance of the resolution approved by the Iowa Medical Society House of Delegates in 1962, to the next meeting of the AMA House of Delegates for its action, and be it further

Resolved, If this resolution is approved by the House of Delegates of the AMA, that the president of the AMA be requested to appoint a committee to study and write a bill for this proposed legislation which may serve as a model for any state medical society wishing to enact this type of legislation.

Mr. Speaker, I move the adoption of this portion of the report.

RESOLUTION 12 FROM CERRO GORDO COUNTY

In view of past commitments and pending legislation on the implementation of MAA in Iowa, no action should be taken on this resolution at this time.

Mr. Speaker, I move the adoption of this portion of the report.

RESOLUTION 4 FROM DAVIS COUNTY

The Reference Committee studied this resolution on free choice of physician in compensation cases in conjunction with the Supplemental Report of the Committee on Industrial Health. In view of the subsequent approval of that Supplemental Report, the Reference Committee felt that no action should be taken on Resolution 4 at this time. It urges the Committee on Industrial Health to encourage voluntary procedures which would facilitate the free choice of physician.

Mr. Speaker, I move the adoption of this portion of the report.

RESOLUTIONS 3, 8 AND 9 FROM FAYETTE COUNTY

These three resolutions, being similar in content, were considered together. Your Reference Committee recommends approval of Resolution 8—which provides for a program of education for Society members on the meaning and content of the Liberty Amendment—with the understanding that the responsibility for carrying out the program shall remain with the Fayette County Medical Society and shall be implemented in the name of the Fayette County Medical Society with whatever assistance the IMS Board of Trustees may deem reasonable and appropriate. The Reference Committee feels that until the members of the Society are well versed in the meaning of this amendment, no action should be taken on Resolutions 3 and 9.

Mr. Speaker, I move the adoption of this portion of the report.

SUPPLEMENTAL REPORT OF THE OSTEOPATHIC AND MD/DO LIAISON COMMITTEES

Your Reference Committee notes that page one of the report was amended by Dr. Rhodes, chairman of these Committees.

Your Committee, noting the request for advice and direction from the House of Delegates on page three of the report, heard considerable discussion in the open hearings on the evaluation program and the continuation of the MD/DO Liaison Committee. Comments indicated that there was near unanimity of opinion that the evaluation program (modified, if indicated), as well as the MD/DO Liaison Committee, should be continued as long as the Society feels that the purposes of the program and the Committee are fulfilled.

Special commendation is hereby given to the men who have worked long and unselfishly on these committees, and to Dr. Rhodes, who has given unstintingly of his time as chairman.

Mr. Speaker, I move the adoption of this portion of the report.

SUPPLEMENTAL REPORT OF THE COMMITTEE ON LEGISLATION

This report was considered in parts. The first part—on national legislation—had been submitted for information only. The second part—on state legislation—was discussed section by section. Except for the items herein specified, no comment was required.

Composite Board. This section was discussed previously in discussion of the Supplemental Report of the Osteopathic and MD/DO Liaison Committees and requires no further comment.

Nurses Practice Act. In consideration of this section, your Reference Committee recognizes the dilemma of the Committee on Legislation regarding IMS policy on the licensing of paramedical groups as to whether or

not it applies to nurses. We concur with the Committee's suggestion that the question be referred to the appropriate IMS committee for research.

Radiation Control. This Reference Committee takes cognizance of the importance of this section and urges the fullest support possible for this vital piece of legislation.

Mr. Speaker, I move the adoption of this portion of the report.

Mr. Speaker, I move the adoption of this report as a whole.

In conclusion, your Reference Committee commends those who appeared before it in open hearing, and recognizes their sincere effort. This interest and effort has been of great value in aiding the Reference Committee in its deliberations.

Respectfully submitted,
E. E. GAMET, M.D., *Chairman*
N. W. IRVING, JR., M.D.
J. F. KELLY, M.D.
R. J. COBLE, M.D.

MISCELLANEOUS BUSINESS

Mr. Speaker, your Reference Committee on Miscellaneous Business met and considered the following subjects:

1. A report from the Preceptorship Committee and your Reference Committee emphatically recommends that a preceptorship should continue to be a requirement for graduation.

Mr. Speaker, I move the adoption of this portion of the report.

2. Your Reference Committee considered the *HANDBOOK* Report of the Subcommittee on Medical Practice in Hospitals and Nursing Homes. Your Reference Committee approves this report as a whole with the exception of recommendation No. 2 on page 78 in the *HANDBOOK* report, the substance of this paragraph being referred to the Reference Committee on Insurance and Medical Service.

Mr. Speaker, I move the adoption of this portion of the report.

3. Your Reference Committee considered the Supplemental Report of the Subcommittee on Medical Practice in Hospitals and Nursing Homes. Your Reference Committee recommends approval of the Supplemental Report as it defines the responsibilities and privileges of both the governing board of a private hospital and a physician of that hospital staff.

Mr. Speaker, I move adoption of this portion of the report.

4. Your Reference Committee studied the Supplemental Report of the Subcommittee on Rehabilitation and, since this report was for informational purposes only, your Reference Committee has no recommendation except to approve the Supplemental Report as presented.

Mr. Speaker, I move adoption of this portion of the report.

5. Your Reference Committee heard lengthy testimony and considered carefully the Supplemental Report of the Committee on Medical Education and Hospitals.

Your Reference Committee recommends wholehearted support of Dean Hardin by the medical profession in Iowa.

Your Reference Committee believes the vision, atti-

tudes, achievements and cooperation of Dean Hardin with the Iowa Medical Society are excellent.

Mr. Speaker, I move the adoption of this portion of the report.

Your Committee feels it is essential to perpetuate the training of physicians in general practice; general internships are of greater importance than straight internships; intern training programs should be centered in community hospitals rather than, or in addition to, University Hospitals; intern and resident programs should be based on the number of general practitioners and specialists who will need to be replaced in coming years; and, it would be advisable to develop a master plan for medical education in Iowa.

Further, your Reference Committee believes the AMA Council on Medical Education and Hospitals does not reflect clearly the current problems in medical education and patient care, and the IMS should support resolutions recommending an equitable representation of physicians in private practice and medical educators on the AMA Council on Medical Education and Hospitals, in an effort to assure physicians not in academic medicine a more powerful voice in establishing policies and programs.

Your Reference Committee recommends that at least one IMS AMA Delegate and other available members present the above views before the AMA Council on Medical Education and Hospitals Reference Committee hearings which will be held during the 1963 Annual Meeting of the AMA in Atlantic City, June 16-20.

Mr. Speaker, I move adoption of this portion of the report.

Your Reference Committee considered resolution No. 19 introduced by the Webster County Medical Society regarding the formal qualifications for nursing instructors. Your Reference Committee recommends the resolution be referred to the IMS Special Committee on Nursing Education and Service for further study.

Mr. Speaker, I move the adoption of this portion of the report.

Mr. Speaker, I move the adoption of the report as a whole.

Respectfully submitted,
J. J. REDMOND, M.D., *Chairman*
J. P. CLARK, M.D.
R. E. CLARK, M.D.
E. E. LINDER, M.D.
F. A. ROLFS, M.D.

REPORTS OF OFFICERS

The Committee met in open session, with members of the Board of Trustees and other interested officers present. It considered Supplemental Reports A, B, and C of the Board of Trustees.

Regarding Supplemental Report A: Supplemental Report A, presented by Dr. S. P. Leinbach, was considered, and your Reference Committee supports the activities of the Trustees as they have carried them out in behalf of the members.

In the interest of economy, comfort, and convenience, the Committee supports the Board of Trustees in selecting a Des Moines hotel as a meeting place, and the Committee would be in accord with the Board of Trustees to arrange the 1964 convention on the same basis as this year. Your Reference Committee feels the present format of the program strikes a balance between the economic and the scientific—and feels the Program

Committee is to be commended for the excellent program this year.

Your Reference Committee believes that a warm relationship exists at the present time between the Iowa Medical Society and the State University of Iowa Medical School, under the new dean, Dr. Robert C. Hardin.

Your Reference Committee concurs with the remainder of the report.

Mr. Speaker, I move the adoption of this portion of the report.

Regarding Supplemental Report B: In regard to Section I (finances), the decrease of income, although important, is not regarded as serious at the present time. The moving of the annual meeting place has been one means of accomplishing reduction of expenses. The Committee has no specific recommendations for a means of increasing revenue, and the Committee does not feel the Society's fiscal situation is sufficiently critical to warrant a recommendation for dues increase at this time.

In regard to Section II (building program), your Committee feels the existing facilities of the State Society building are presently inadequate to accommodate the ever-increasing demands. According to a mandate of the previous House of Delegates, the Board of Trustees has pursued an active course in acquiring a new site, and has purchased a three-acre tract in West Des Moines. In our opinion, the Board of Trustees exercised sound judgment in the selection of a building site, and is to be commended for this property acquisition. The records presented to the Committee confirm the fact that the Board made this purchase only after thorough investigation, and advice from appropriate professional consultants. The next consideration is a future building upon this site. This Committee recommends reaffirming the mandate of the previous House of Delegates, and proposes that the Board of Trustees actively pursue architectural consultation and methods of financing this structure, for presentation at a future House of Delegates meeting.

Mr. Speaker, I move the adoption of this portion of the report.

Regarding Supplemental Report C: The Reference Committee agrees with the thinking of the Board of Trustees, and it is recommended that the Educational and Scientific Trust of the Iowa State Medical Society be dissolved, and further, that the articles of the Iowa State Medical Society Educational Fund, Inc., be modernized and amended, with the name changed to Iowa Medical Foundation, in order that this Foundation may not only carry on the worthwhile activities of the past but may branch out into additional areas of charitable, educational and scientific significance.

Therefore, Be It Resolved, That this House of Delegates request the members of the "Educational and Scientific Trust of the Iowa State Medical Society" to dissolve the corporation and distribute any assets to the Iowa State Medical Society Educational Fund, Inc.;

Be It Further Resolved, That this House of Delegates request the members and directors of Iowa State Medical Society Educational Fund, Inc., to amend its articles of incorporation to change the name of the foundation to "Iowa Medical Foundation," to make any further changes that are necessary or desirable to permit an expanded program of charitable, scientific and educational activity and to provide for a Board of Directors of nine persons, three of whom will be the incumbent Trustees of the Iowa Medical Society, and two Past Presidents of the Iowa Medical Society, with four additional directors to be selected by these five, the four additional directors to include if desired the Executive Director of the Iowa Medical Society and one other non-medical person, and two members of the Iowa Medical Society.

Mr. Speaker, I move the adoption of this portion of the report.

Your Reference Committee also wishes to take this opportunity to commend the Board of Trustees for its accomplishments and for the many hours the members have taken from their private practices in the interest of the conduct of the business affairs of the Society.

Mr. Speaker, I move the adoption of this portion of the report.

Mr. Speaker, I move the adoption of the report as a whole.

Respectfully submitted,

M. O. LARSON, M.D., *Chairman*

L. O. GOODMAN, M.D.

ERLING LARSON, M.D.

H. E. RUDERSDORF, M.D.

P. A. NIERLING, M.D.

ARTICLES OF INCORPORATION AND BY-LAWS

(The House of Delegates considered and rejected two proposals that the Standing Committee on Articles of Incorporation and By-Laws had made and the Reference Committee on Articles of Incorporation and By-Laws had approved, viz., (1) to make the alternate AMA delegate and the immediate past-president of the Society voting members of the IMS Executive Council; and (2) to accord officer status in the IMS to the alternate delegate to the AMA. Instead, the House of Delegates approved the following change in the Articles of Incorporation.

Resolved, That Article IV, Section 16, of the Amended and Substituted Articles of Incorporation and By-Laws, as amended, be and hereby is amended by striking the whole of the second sentence thereof, and substituting in lieu thereof the following: "The Alternate Delegate to the American Medical Association and the Immediate Past President of this Society shall be non-voting members of the Executive Council.")

The third and last proposal made by the Standing Committee in its Supplemental Report was designed to implement a request from the Plan and Scope Committee, that a Committee on State Departments be substituted for the present Committee on Public Health. In support of that change, the Plan and Scope Committee had pointed out in its Supplemental Report that a Committee on State Departments could establish continuing liaison with various governmental bodies such as the State Boards of Health and Social Welfare, the Board of Control and the Department of Public Safety, for the discussion of any of their functions that affect the practice of medicine and/or the health of the people of Iowa.

To accomplish this purpose, the Reference Committee recommends the adoption of the following proposal formulated by the Standing Committee on Articles of Incorporation and By-Laws:

Resolved, That the By-Laws of Iowa Medical Society, as amended, be and hereby are amended by deleting from Chapter V, Section 1 thereof, and Chapter V, Section 15, thereof, the words "committee on public health," and wherever else such words may appear in said Amended and Substituted By-Laws of Iowa Medical Society, as amended, and substituting in lieu of such words the words "committee on state departments."

Be It Further Resolved, That Section 15, Chapter V of the Amended and Substituted By-Laws of Iowa Medical Society, as amended, be further amended as follows:

1. By striking the period (.) at the end of the second sentence thereof and inserting in lieu thereof the following: "with particular reference to the programs of state departments or agencies."

2. By striking all after the word "Trustees" in the last sentence thereof and inserting in lieu thereof the following:

"... Executive Council and the House of Delegates, and, as a whole or through appropriate sub-committees, to establish liaison with, and to represent the society and its policies before, the various state departments or agencies which are concerned with activities relating to the practice of medicine or the public health."

Mr. Speaker, I move the adoption of this portion of the Reference Committee's report.

The Reference Committee further proposes the following:

Be It Further Resolved, That the Chairman of the Board of Trustees and the Secretary of Iowa Medical Society be and they hereby are authorized and directed to sign, acknowledge and publish the foregoing Amendments as the Eighth Amendments to the Articles of Incorporation and to the By-Laws of Iowa Medical Society, as amended, and to do all other things required by law or otherwise to execute, complete and place in lawful effect such Amendments.

Mr. Speaker, I move the adoption of this portion of the Reference Committee's report.

Mr. Speaker, I move the adoption of the Reference Committee's report as a whole, as amended.

Respectfully submitted,

P. W. BRECHER, M.D., *Chairman*

T. C. WHITE, M.D.

G. H. POWERS, M.D.

J. L. SAAR, JR., M.D.

M. G. BOURNE, M.D.

GENERAL PRACTITIONER OF THE YEAR AWARD

The Reference Committee on General Practitioner Award met on Sunday, April 7, following adjournment of the first session of the House of Delegates.

After thorough discussion, the Committee elected not to designate a recipient for Iowa's Outstanding General Practitioner Award for the year 1963.

The Committee noted that during the past several years, the number of candidates presented for this award has been decreasing and this year there was only one candidate, which prevented the Committee from making any comparisons. This indicated to the committee a lack of interest on behalf of county societies and individual members regarding a General Practitioner Award.

The Committee further agreed that in view of the fact that the American Medical Association has dis-

continued the presentation of a national general practitioner of the year award, the Iowa Medical Society should discontinue recognition of an Iowa general practitioner in conformity with the AMA action.

The Committee recommends that the discontinuation of an Iowa General Practitioner Award be considered by the IMS Executive Council, and a report of the Council's action be disseminated to the membership in advance of the 1964 Annual Meeting.

Mr. Speaker, I move the adoption of this report as a whole.

Respectfully submitted,

W. A. CASTLES, M.D., *Chairman*

F. G. LOOMIS, M.D.

F. N. WEBER, M.D.

K. K. HAZLET, M.D.

K. E. LISTER, M.D.

The following resolutions were then adopted by the House of Delegates:

Resolved, That a digest of the deliberations and conclusions of the Executive Council of the IMS be published in the JOURNAL OF THE IOWA MEDICAL SOCIETY, to be read by all interested members of the Society.

Resolved, That this House expresses its appreciation to the management of Hotel Fort Des Moines and to the Convention Bureau of the Des Moines Chamber of Commerce for their excellent cooperation with the officers of the IMS in staging this annual meeting.

Resolved, That the actions of the Board of Trustees of the Iowa Medical Society from the date of the last annual meeting to date be and they hereby are approved, ratified and confirmed.

Resolved, That the House of Delegates authorize the Board of Trustees to prepare a suitable testimonial to be presented to Dr. George H. Scanlon in recognition of his outstanding service as president of the Society.

Resolved, That the House of Delegates accept the invitation of the Polk County Medical Society to hold the IMS annual meeting in Des Moines in 1965.

The Speaker thanked the field secretaries of the Iowa Medical Society for their service as sergeants at arms, and announced that the organizational meetings of the Board of Trustees and the Judicial Council would take place immediately following the adjournment of the House.

The House of Delegates was adjourned by the speaker at 12:30 p.m.

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IOWA MEDICAL SOCIETY

Officers and Committees, 1963-1964

President Charles V. Edwards, Sr., Council Bluffs
 President Elect Otis D. Wolfe, Marshalltown
 Vice President Oscar Alden, Red Oak
 Secretary Richard F. Birge, Des Moines*
 Treasurer Verne L. Schlaser, Des Moines*
 Speaker of the House of Delegates
 Lawrence J. Halpin, Cedar Rapids*
 Vice Speaker of the House of Delegates
 Paul M. Kersten, Fort Dodge*

COUNCILORS

	<i>Term Expires</i>
First District, Clarkson L. Kelly, Jr., Charles City	1964
Second District, Jerome F. Paulson, Mason City	1965
Third District, John L. Powers, Estherville	1966
Fourth District, William M. Krigsten, Sioux City	1964
Fifth District, Noble W. Irving, Jr., Des Moines	1966
Sixth District, John W. Ferguson, Newton	1964
Seventh District, Christian E. Radcliffe, Iowa City	1965
Eighth District, Frank G. Ober, Burlington	1964
Ninth District, Kenneth E. Lister, Ottumwa	1965
Tenth District, Elmo E. Gamet, Lamoni	1966*
Eleventh District, Willard G. Kuehn, Clarinda	1964

TRUSTEES

Samuel P. Leinbach, Belmond, Chairman	1965
Cecil W. Seibert, Waterloo	1964
John H. Sunderbruch, Davenport	1966

DELEGATES TO AMA

	<i>Term Expires</i>
Donovan F. Ward, Dubuque	December 31, 1965*
Leslie W. Swanson, Mason City	December 31, 1964
Herman J. Smith, Des Moines	December 31, 1964

M. A. Blackstone, Sioux City, resigned as Councilor, Fourth District, following the 1963 Annual Meeting, and W. M. Krigsten, Sioux City, was appointed by the Board of Trustees to serve until the 1964 Annual Meeting.

J. H. Sunderbruch, Davenport, resigned as Councilor, Eighth District, following his election to the office of Trustee of the Iowa Medical Society, and F. G. Ober, Burlington, was appointed by the Board of Trustees to serve until the 1964 Annual Meeting.

ALTERNATE DELEGATE TO AMA

	<i>Term Expires</i>
Elmer M. Smith, Eagle Grove	December 31, 1965*

EXECUTIVE COUNCIL

Charles V. Edwards, Sr.	Council Bluffs
Otis D. Wolfe	Marshalltown
Oscar Alden	Red Oak
Richard F. Birge	Des Moines
Verne L. Schlaser	Des Moines
Samuel P. Leinbach	Belmond
Cecil W. Seibert	Waterloo
John H. Sunderbruch	Davenport
Clarkson L. Kelly, Jr.	Charles City
Jerome F. Paulson	Mason City
John L. Powers	Estherville
William M. Krigsten	Sioux City
Noble W. Irving, Jr.	Des Moines
John W. Ferguson	Newton
Christian E. Radcliffe	Iowa City
Frank G. Ober	Burlington
Kenneth E. Lister	Ottumwa
Elmo E. Gamet	Lamoni
Willard G. Kuehn	Clarinda
Lawrence J. Halpin	Cedar Rapids
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Camel, Louise M., Council Bluffs
Camp, John R., Britt
Campbell, Donald K., Oskaloosa
Campbell, Nathan, Yarmouth (A.M.)
Campbell, Thomas R., Sioux Rapids (L.M.)
*Campbell, Walter V., Oskaloosa
Canady, George F., Jefferson
Cannon, William M., Waterloo
Cantwell, John D., Davenport (L.M.)
Caplan, Richard M., Iowa City
Caramela, Calvin M., Cedar Rapids
Caraway, Lynn D., Monticello
Carey, Edward T., Jr., Clinton
Carlile, Amos W., Manning (L.M.)
Carlson, Elmer H., Muscatine
Carlson, Frank G., Mason City (L.M.)
Carney, Robert G., Iowa City
Carpenter, Fred E., Newton
Carpenter, Ralph C., Marshalltown
Carrigg, Lawrence G., Cedar Rapids
Carroll, Thomas J., Sibley
Carson, Raymond W., Winterset
Carstensen, Albert B., Linn Grove
Carstensen, Vincent H., Waverly
Carter, Robert E., Des Moines
Carver, David C., Rockwell City
Cary, Walter, Panorama City, California (A.M.)
Cash, Paul T., Des Moines
*Cashman, Chester F., Hartley (A.M.)
Castell, John W., Fairfield
Castles, William A., Dallas Center
Catalona, William E., Muscatine
Catlin, Karl A., Clarinda
Catterson, Leroy F., Oskaloosa
Caudill, George G., Des Moines
*Caughlan, Gerald V., Council Bluffs (L.M.)
Caulfield, John D., New Hampton
Cawley, Paul T., Carroll
Ceille, Edward H., Cedar Falls
Chalian, Garo A., Clinton
Chambers, James W., Des Moines
Chan, Pak-Chue, Kowloon, Hong Kong, China
Chang, Luke, Mason City
Chapler, Keith M., Dexter
Chapman, John S., Dubuque
Chapman, Robert M., Cedar Rapids
Chase, Walter E., Rippey
Chase, William B., Jr., Des Moines
Chase, William B., Sr., Des Moines (L.M.)
Cherwitz, Gordon, Davenport
Chesnut, Paul F., Winterset
Chesnutt, John C., Cherokee
Chester, Walter S., Albia (A.M.)
Chittum, John H., Wapello (L.M.)
Chong, Arnold Y., Iowa City
Christensen, Dale L., Lake City
Christensen, Eunice M., Spencer
Christensen, Everett D., Spencer
Christensen, Floyd D., Remsen
Christensen, John R., Palo Alto, California (L.M.)
Christiansen, Charles C., Grand Mound
Christiansen, John E., Durant
Christopherson, Joseph E., Mason City
Chun, Newton, Dubuque
Clancy, John, Iowa City
Clapsaddle, Dean W., Clear Lake
Clapsaddle, John G., Burt (L.M.)
Clark, Clayton W., Nashua
Clark, Donald R., Waterloo
Clark, George H., Oskaloosa (A.M.)
Clark, Gilbert R., Waterloo
Clark, James P., Estherville
Clark, Richardson E., Manchester
Clark, Thomas D., Knoxville
Clary, William H., Longmont, Colorado (L.M.)
Clasen, Henry W., Littleton, Colorado (L.M.)
Clemens, Albert L., Des Moines
Clifton, James A., Iowa City
Closson, Charles L., Walker (L.M.)
Cloud, Arthur B., Marshalltown
Cmeyla, Patrick M., Sioux City
Cobb, Elliott A., Cedar Rapids
Coble, Rollo J., Lake Park
Cochrane, Allen M., Perry
Coddington, James H., Humboldt
Cody, William E., Deerfield Beach, Florida (L.M.)
Coffey, James L., Emmetsburg
Coffman, Eugene W., Dubuque
Cogley, John P., Council Bluffs
Cohen, Sidney A., Council Bluffs
Colbert, Lawrence D., Royal
Cole, Elmer J., Woodbine (L.M.)
Cole, Fern N., Iowa Falls
Coleman, Francis C., Des Moines
Collignon, Urban J., Council Bluffs
Collins, Alice J., Des Moines
Collins, John F., Davenport
Collins, Loren E., Sioux City
Collins, Robert E., Sioux City
Collins, Robert M., Council Bluffs
Collison, Robert M., Oskaloosa
Comeau, Adeline E., Clarinda
Compton, John D., Edgewood
Conklin, Eugene V., Dubuque
Conkling, Russell W., Newton
Conley, Rollin M., Perry
Conlon, James B., Council Bluffs
Conmey, Roy M., Sergeant Bluff (L.M.)
Connell, John, Des Moines (A.M.)
Connolly, Edgar J., Dubuque
Conner, John D., Nevada
Conner, Julius S., Des Moines
Connor, William E., Iowa City
Conzett, Donald C., Dubuque
Cook, Kenneth G., Fairfield
Cook, Stuart H., Rock Rapids
Cooper, Clark N., Waterloo
Cooper, Dean C., Fort Dodge
Cooper, Gladys A., Lansing, Michigan (L.M.)
Cooper, Raymond E., Keokuk
Cooper, Reginald R., Iowa City
Cooper, Wayne K., Cedar Rapids
Coppoc, Loran E., Ottumwa
Corcoran, Thomas E., Des Moines
Coriden, Thomas L., Sioux City
Corn, Henry H., Des Moines
Cornish, James A., Storm Lake
Cornish, Lawrence R., Indianola
Corton, Richard V. M., Waterloo
Couchman, Mary Pucci, Mount Pleasant
Couchman, Phillip G., Mount Pleasant
Coughlan, Charles H., Fort Dodge
Coughlan, Daniel W., Des Moines
Coulson, Forest H., Burlington
Cox, Russell L., Estherville
Crabb, Dayle N., Denison
Crandall, Jack S., Marshalltown
Crane, David D., Shelby
Crawford, Robert H., Burlington
Crawford, W. McCulloch, Burlington
Crawford, William A., Iowa City
*Cressler, Frank E., Churdan (L.M.)
Cretzmeyer, Francis X., Emmetsburg (L.M.)
Crew, Arthur E., Marion (L.M.)
Crew, Philip I., Cedar Rapids
Croker, Mary Ann, Manchester
Cromwell, James O., Des Moines
Cronkleton, Thomas E., Davenport
Cross, Donald L., Boone
Cross, Kenneth R., Iowa City
Crossley, J. Wesley, Osage
Crow, George B., Burlington (L.M.)
Crowley, Daniel F., Jr., Des Moines
Crowley, Paul J., Davenport
Croxdale, Edward L., Villisca
Culp, David A., Iowa City
Cunnick, Paul C., Davenport
Cunningham, Glenn D., Davenport
Cunningham, Melvin B., Norwalk
Curtis, Dean, Chariton
Cusack, Patrick J., Newton
Cusick, George W., Davenport
Dagle, Charles L., Fort Dodge
Dahl, Harry W., Des Moines
Dahlbo, John E., Sutherland
Dahlquist, Ralph M., Decorah
Dalager, Robert D., Ottumwa
Dalbey, Glenn M., Traer
Danielson, May, Clinton
Dankle, Willis K., Clear Lake
Dannenbring, Forrest G., Fort Dodge
Daut, Richard V., Davenport
Davey, William P., Sioux City
Davidson, Thorald E., Mason City
Davis, John R., Iowa City
Dawson, Emerson B., Fort Dodge
Dawson, Orville L., Burlington
Dawson, Robert J., Graettinger
Day, Philip M., Oskaloosa (L.M.)
Deakins, Martin L., Logan
Dean, Abbott M., Council Bluffs
*Dean, William F., Osceola (L.M.)
Deaton, Helen J., Iowa City
DeBacker, Leo J., Jr., Iowa City
Decker, Charles E., Davenport
Decker, Henry G., Des Moines
Decker, Jay C., Sioux City (L.M.)
DeGowin, Elmer L., Iowa City
deGravelles, William D., Jr., Des Moines
De Kraay, Warren H., Ottumwa
DeLashmutt, Edward J., Fort Madison
Demaree, Chester, Lacona (L.M.)
De Meulenaere, John C., Grinnell
Dempewolf, Robert D., Bellevue
Dennert, Walter G., Boone
Denser, Clarence H., Jr., Des Moines
Deranleau, Robert F., Perry
DeShaw, Earl H., Monticello
Des Marias, Varina, Grundy Center
Devine, Arthur W., Waterloo
Deweese, Frank L., Newton Square, Pennsylvania
DeYoung, Ward A., Glenwood
Diamond, Bernard, Waterloo
Dick, Fred, Jr., Waterloo
Dickens, James H., Des Moines
Diddy, Keith W., Perry
Dieckmann, Merwin R., Waterloo
Dierker, LeRoy J., Fort Madison
Diment, Merle M., Des Moines
Dimsdale, Lewis J., Sioux City
Ditto, Boyd L., Burlington (L.M.)
Dixon, John B., Mason City
Doane, Grace O., Des Moines (A.M.)
Dolan, Albert M., Evansdale
Dolan, Kenneth D., Ottumwa
Dolan, Thomas R., Decorah
Donahue, James C., Jr., Davenport
Donaldson, James A., Iowa City
Donlin, Robert E., Harlan
Donnelly, Madelene M., Des Moines
Donohue, Edmund S., Sioux City
Doolittle, Russell C., Clearwater Beach, Florida (L.M.)
Doran, John R., Ames
Dorner, Ralph A., Des Moines
Dorsey, Thomas J., Fort Dodge (L.M.)
Doss, W. Norman, Leon
Douglas, Clarence E., Belle Plaine
Down, Howard I., Sioux City
Downey, Eugene M., Guttenberg
Downing, Arthur H., Des Moines
Downing, John S., Cedar Rapids
Downing, Leroy M., Cedar Rapids (L.M.)
Downing, Wendell L., LeMars
Downs, Vernon S., Ottumwa (A.M.)
Dressler, John B., Ida Grove
Drevets, Curtis C., Wichita, Kansas
Drew, Edward J., Des Moines
Drier, William C., Waterloo
Driver, Richard W., Waterloo
Drown, Roger E., Fort Dodge
Dubansky, Marvin H., Des Moines
Dulin, Evelyn H., Iowa City (A.M.)
Dulin, John W., Iowa City
Duncan, Ellis, Fremont
Dunlay, Robert W., Iowa Falls
Dunlevy, James H., Fairfield
Dunn, Dale E., Estherville
Dunn, Francis C., Cedar Rapids
Dunn, Leo J., Iowa City
Dunn, Robert C., Fort Dodge
Dunner, Ada, Des Moines
Dusdieker, Stanley W., Des Moines
Dutton, Dean A., Van Horne
Dwyer, Robert E., Clinton
Dyson, James E., Phoenix, Arizona (A.M.)
Dyson, Ralph E., Des Moines
Eastburn, Harvey B., Burlington
Eaton, Robert C., Clarion
Ebinger, Edward W., Ottumwa
Echternacht, Arthur P., Fort Dodge
Eckart, Emile P., Fort Dodge
Eckberg, Richard A., Waterloo
Eckstein, John W., Iowa City
Edgerton, Winfield D., Davenport
Edington, Frank D., Spencer
Edwards, Charles V., Council Bluffs
Edwards, Charles V., Jr., Council Bluffs
Edwards, John F., Clinton
Edwards, Ralph R., Centerville
Egan, Thomas J., Bancroft
Egbert, Daniel S., Fort Dodge
Eggert, Delmer C., Iowa City
Egermayer, George W., Elliott (L.M.)
Eggert, Delmar C., Iowa City
Eggleston, Alfred A., Burlington
Egli, Gene E., Fairfield
Ehrenhaft, Johann L., Iowa City
Eicher, Charles R., Iowa City
Eiel, John O., Osage
Eisenach, John R., Shenandoah
Ekart, Paul I., Ottumwa
Eklund, Harold E., Des Moines
Eller, Lancelot W., Kanawha
Elliott, Olin A., Des Moines
Ellis, Howard G., Des Moines
Ellison, George M., Clinton
Ellsworth, H. Charles, Cherokee
Ellyson, Craig D., Waterloo
Elmer, Norman J., Sumner
Ely, Lawrence O., Des Moines
Emanuel, Dennis G., Ottumwa
Emerson, Donald D., Ottumwa
Emmons, Marcus B., Clinton
Emmons, Margaret S., Clinton

- Emmons, Richard O., Clinton
 Emond, Leonard D., Dubuque
 Eneboe, Edward M., Hawarden
 Engelmann, Andrew T., Sioux City
 England, William J., Griswold
 Enna, Melchior D., Dumont
 Ennis, Harry H., Manchester (L.M.)
 Entringer, Albert J., Dubuque
 Entz, F. Harold, Waterloo
 Erickson, Ernest D., Sioux City
 Ericsson, Martin G., Cedar Falls
 Erikson, Roland E., Davenport
 Erps, William E., Storm Lake
 Esders, Martin S., DeWitt
 Estes, Maurice, Cedar Rapids
 Evans, John E., Winterset
 Evans, William I., Iowa City
 Evers, Alvin E., Pella
 Everson, Dale M., Shell Rock
- Faber, Luke A., Dubuque
 Faber, Luke C., Iowa City
 Fail, Charles S., Adel
 Fangman, Charles A., Carroll
 Farago, Denes S., Arnolds Park
 Farlow, Charles T., Farnhamville (L.M.)
 Farnsworth, Harold E., Storm Lake (A.M.)
 Farrage, Edward R., Council Bluffs
 Fatland, John L., Des Moines
 Faust, John H., Manson
 Fawcett, Kennedy C., Ames
 Fee, Charles H., Denison
 Feightner, Robert L., Fort Madison
 Feldick, Harley G., Buffalo Center
 Fellows, Joseph G., Ames
 Felter, Allan G., Van Meter
 Fenton, Charles D., Bloomfield
 Fenton, Robert L., Centerville
 Ferengul, Ellen E., Des Moines
 Ferguson, Edward C., III, Iowa City
 Ferguson, John W., Newton
 Ferguson, R. Paul, Lake City
 Ferlic, Rudolph J., Carroll
 Fesenmeyer, Charles R., Davenport
 Fickel, Jack D., Red Oak
 Field, Grace E. W., Juneau, Alaska
 Fieseler, Walter R., Okoboji
 Fieselmann, George F., Spencer
 Fillenwarth, Floyd H., Charles City
 Fincham, Richard, Iowa City
 Fisch, Roman J., Le Mars
 Fischer, Harry W., Iowa City
 Fisher, June M., Iowa City
 Fisher, William A., Creston
 Fishman, Harlow J., Cherokee
 Fisk, Charlotte, Des Moines
 Fitz, Annette E., Coralville
 Flannery, Francis E., Cedar Rapids
 Flater, Norman C., Floyd
 Flatt, Adrian E., Iowa City
 Fletcher, Fred W., Iowa City
 Flocks, Rubin H., Iowa City
 Floersch, Eugene B., Council Bluffs
 Flood, James L., Denison
 Flynn, Charles H., Cheyenne, Wyoming
 Flynn, Gordon A., Davenport
 Flynn, James R., Jr., Cedar Rapids
 Foley, Robert J., Davenport
 Foley, Walter E., Davenport
 Foley, Walter E., Jr., Davenport
 Fomon, Samuel J., Iowa City
 Fordyce, Frank W., Des Moines (A.M.)
 Forsythe, Dorothy C., Newton
 Forsythe, Frank E., Newton
 Foss, Robert H., Des Moines
 Foster, Morgan J., Cedar Rapids
 Foster, Warren H., Clinton
 Foster, Wayne J., Cedar Rapids
 Fowler, Willis M., Iowa City
- *Fox, Charles I., Port Isabel, Texas (L.M.)
 Fox, Ray A., Charles City
 Fox, Stephan, Ottumwa
 Franchere, Chetwynd M., Mason City
 Franey, William E., Cedar Rapids
 Frank, Louis J., Sioux City (A.M.)
 Frank, Owen L., Maquoketa
 Fransco, Peter P., Ruthven
 Fraser, James B., Des Moines
 Fraser, John H., Monticello
 Frech, Raymond F., Newton
 Freed, David A., West Union
- *French, Royal F., Marshalltown (L.M.)
 French, Valient D., Cedar Falls (A.M.)
 French, Vera V., Bettendorf
 Frenkel, Hans S., Clarinda
 Friday, Walter C., Burlington
 Frink, Lyle F., Spencer
 From, Paul, Des Moines
 Frost, John F., Iowa City
 Frost, Loraine H., Iowa City
 Fry, Gerald A., Vinton
 Fuerste, Frederick, Jr., Dubuque
- ★Fuller, Dale E., Minot, North Dakota
- Fuller, Lyle R., Garner
 Funk, David C., Iowa City
 Furumoto, Kiyoshi, Keosauqua
- Galbraith, William B., Iowa City
 Galinsky, Leon J., Des Moines
 Gallagher, John P., Oelwein
 Gamet, Elmo E., Lamoni
 Gangeness, Leonard G., Des Moines
 Gann, Edward R., Sigourney
 Gannon, James, Laurens
 Gantz, A. Jay, Greenfield
 Ganzhorn, Harold L., Mapleton
 Ganzhorn, Jack L., Mapleton
 Garber, Keith A., Corydon
 Gardner, Harold O., Waterloo
 Gardner, James I., Iowa City
 Gardner, John R., Lisbon (L.M.)
 Garland, John C., Marshalltown
 Garred, John L., Whiting
 Garred, William P., Onawa
 Garry, Patrick E., Dyersville
 Gartin, Thomas D., Ames
 Garvy, Andrew C., Iowa City
 Gatzke, Laurence D., Muscatine
 Gauchat, Robert D., Iowa City
 Gauger, John W., Early
 Gaukel, Leo A., Onawa
 Gault, James B., Creston
 Gearhart, George W., Springville (L.M.)
 Gee, Kenneth J., Shenandoah
 Gehring, John V., Cherokee
 Gelfand, Arthur B., Sioux City
 Gelman, Webster B., Iowa City
 Geoghegan, Brian P., Des Moines
 George, Louis A., Remsen
 Gerard, Russell S., II, Waterloo
 Gerken, James F., Cedar Falls
 German, Robert G., Marshalltown
 Gernsey, Merritt N., Long Beach, California (L.M.)
 Gerstman, Herbert, Marion
 Gessford, Howard H., George
 Getty, Everett B., Primghar
 Ghrist, Thomas D., Des Moines
 Gibbs, George M., Burlington
 Gibson, Chelsea D., Sac City
 Gibson, Douglas N., Des Moines
 Gibson, Paul E., Des Moines
 Gibson, Preston E., Davenport
 Giegerich, Walter F., Atlantic
 Gildea, Dorothy J., Davenport
 Giles, Francis E., Fort Dodge
 Giles, W. Clark, Council Bluffs
 Gilfillan, Earl E., Bloomfield
 Gilfillan, Edwin O., Bloomfield
 Gilfillan, Homer J., Jr., Bloomfield
 Gillett, Francis A., Oskaloosa (L.M.)
 Gillett, R. Giles, Sigourney
 Gillies, Carl L., Iowa City
 Gilloon, James R., Dubuque
 Gingles, Earl E., Onawa
 Ginzberg, Fanny T., Cherokee
 Gittins, Thomas R., Sioux City
 Gittler, Ludwig, Fairfield
 Gius, John A., Iowa City
 Glenn, David H., Eldora
 Glesne, Otto N., Fort Dodge
 Glissman, Jean B., Des Moines
 Glomset, Daniel A., Des Moines
 Goad, Robley R., Muscatine
 Godbey, Maunis E., Cedar Rapids
 Goddard, Chester R., Iowa City
 Godfrey, James T., Jr., Cherokee
 Goebel, Clarence J., Sioux City
 Goebel, Kenneth E., Council Bluffs
 Goen, Edwin J., Charles City
 Goenne, Richard E., Davenport
 Goenne, William C., Sr., Davenport (L.M.)
 Goerlich, Berthold, Elkins, West Virginia
 Goggin, John G., Ossian
 Goldberg, J. Eugene, Waterloo
 Goldberg, Louis, Des Moines
 Goldman, Bernard R., Davenport
 Gonlubol, Fethi, Council Bluffs
 Goodenow, Sidney B., Colo. (L.M.)
 Goodman, Lawrence O., Marshalltown
 Gopelerud, Clifford P., Iowa City
 Gordon, Arnold M., Des Moines
 Gorrell, Ralph L., Clarion
 Goswitz, Helen V., Iowa City
 Gottsch, Edwin J., Shenandoah
 Gould, James P., Des Moines
 Gower, Walter E., Fort Dodge
 Graether, John M., Marshalltown
 Graham, James W., Sioux City
 Graham, Thomas C., Iowa Falls
 Grahek, Lawrence J., Oskaloosa
 Grandinetti, Arthur F., Oelwein
 Grandon, Eugene L., Cedar Rapids
 Grant, John A., Ames
 Grant, John G., Ames
 Grau, Amandus H., Denison
- Graves, John P., Dubuque
 Gray, Gordon W., Davenport
 Gray, John F., Melchor (L.M.)
 Gray, Ralph E., Eldora
 Gray, Lawrence R., Ankeny
 Greco, Louis R., Jr., Boone
 Green, David, Iowa City
 Green, Don C., Des Moines
 Green, John W., Jr., Des Moines
 Greenblatt, Jerald, Cedar Rapids
 Greenhill, Solomon, Des Moines
 Greenleaf, John S., Iowa City
 Greteman, Theodore J., Dubuque
 Griesy, Carl V., Rock Rapids
 Griffin, Charles C., Dyersville
 Griffin, Robert E., Sheldon
 Griffith, William O., Council Bluffs
 Griffith, Wylie H., Clinton
 Grimmer, Billy, Grinnell
 Groben, Elmer S., Columbus Junction
 Grossman, Milton D., Sioux City
 Grossman, Raymond S., Marshalltown
 Grossmann, Edward B., Orange City
 Grubb, Merrill W., Galva
 Grundberg, Gerhard, Maquoketa
 Gude, Herbert E., Iowa Falls
 Guggenheim, Paul, Council Bluffs
 Gugle, Lloyd J., Ottumwa
 Guiang, Sixto F., Burlington
 Gurau, Henry H., Des Moines
 Gustafson, John E., Des Moines
 Gutch, Roy C., Chariton (L.M.)
 Gutenkauf, Charles H., Des Moines
- Hach, Felix T., Ankeny
 Hadlund, Ralph L., Waterloo
 Hagen, Edward F., Decorah
 Hagen, Edward J., Sioux City
 Haines, Dietrich J., Des Moines
 Hake, Dexter H., Palo Alto, California
 Hale, Albert E., Mason City
 Hall, Bonnybel A., Maynard
 Hall, Cluley C., Maynard
 Hall, William E., Des Moines
 Hallam, F. Tulley, Des Moines
 Hallberg, Harold C., Oelwein
 Halpin, Lawrence J., Cedar Rapids
 Hamilton, Ben C., Jefferson (L.M.)
 Hamilton, Cecil V., Ames
 Hamilton, Henry E., Iowa City
 Hamilton, William K., Iowa City
 Hammer, Richard W., Des Moines
 Hansell, William W., Des Moines
 Hansen, David M., Cedar Falls
 Hansen, Fred A., Red Oak
 Hansen, Niels M., Mercer Island, Washington (A.M.)
 Hansen, Robert R., Marshalltown (L.M.)
 Hansen, Russell R., Storm Lake
 Hanson, Carl A., Waterloo
 Hanson, Henry M., Waverly
 Hanson, Walter N., Mason City
 Hansmann, Irving J., Council Bluffs
 Hardin, John F., Bedford
 Hardin, Robert C., Iowa City
 Harding, Dale A., Eagle Grove
 Hardwig, Oswald C., Waverly
 Harken, Conreid R., Osceola (L.M.)
 Harms, George E., Norway
 Harned, Lewis B., Waterloo
 Harper, George E., Fort Madison
 Harper, Harry D., Fort Madison
 Harper, William H., Jr., Keokuk
 Harpring, Alice J., Davenport
 Harris, Herbert H., Sioux City
 Harris, Ray R., Dubuque (L.M.)
 Harten, James N., Cherokee
 Hartley, Byron D., Mount Pleasant
 Hartman, Frank T., Waterloo (L.M.)
 Hartman, Howard J., Waterloo
 Hartunian, Edick, Mount Pleasant
 Harvey, Glen W., Cedar Rapids
 Harwood, Arthur M., Waverly
 Hassebroek, Roy J., Orange City
 Hastings, Philip R., Waterloo
 Hastings, Richard A., Ottumwa
 Hathaway, Robert G., Waterloo
 Haufe, W. David, Bloomfield
 Haugland, Stanley M., Lake Mills
 Hausheer, Myron R., Oakland
 Havlik, Al J., Tama
 Hawkins, Charles P., Clarion
 Hayden, Milford D., Cherokee
 Hayes, William P., Cedar Rapids
 Hayne, Robert A., Des Moines
 Hayne, Willard W., Des Moines
 Hazlet, Kenneth K., Dubuque
 Healy, James D., Mason City
 Heeren, Ralph H., Des Moines
 Heffernan, Chauncey E., Sioux City
 Hege, John H., Anamosa
 Hegg, Lester R., Rock Valley
 Hegstrom, George J., Ames
 Heidenreich, William F., Dubuque

- Heimann, Verne R., Sioux City
 Heine, George W., Cedar Falls
 Heise, Carl A., Jr., Jewell
 Heise, Harris R., Marshalltown
 Heise, Robert H., Story City
 Heitzman, Paul O., Cedar Rapids
 Helling, Harry B., Fort Madison
 Helseth, Carleton T., Des Moines
 Henderson, Walker B., Oelwein
 Hendricks, Atlee B., Davenport
 Hendricks, Clifford A., Cedar Rapids
 Hendricks, James Y., Clear Lake
 Hendrickson, Alvin H., Sioux City
 Henkin, John H., Sioux City
 Henn, Samuel C., Cedar Falls
 Hennes, Raphael J., Oxford
 Hennessey, John M., Manilla
 Hennessy, J. Donald, Council Bluffs
 Henning, Roger E., Des Moines
 Henningsen, Artemus B., Clinton
 Henstorf, Harold R., Shenandoah
 Heppelwhite, James W., Des Moines
 Herlitzka, Alfred J., Mason City
 Herman, John C., Boone
 Herrick, Walter E., Ottumwa
 Herrmann, Christian H., Middle
 Hersey, Nelson L., Independence
 Hertko, Edward H., Des Moines
 Hess, John, Jr., Des Moines
 Hess, John F., Dyersville
 Heuermann, Dorothy J., Latimer
 Heusinkveld, Henry J., Clinton (A.M.)
 Hickenlooper, Carl B., Winterset (L.M.)
 Hickman, Charles S., Centerville (L.M.)
 Hicks, Wayland K., Sioux City
 Hierschbiel, Ernst A., Iowa City
 Hildebrand, Howard H., Ames
 Hill, Julia Ford, Santa Barbara, California (L.M.)
 Hill, Lee F., Des Moines
 Hines, Ralph E., Des Moines
 Hirleman, Hal R., Cedar Rapids
 Hirsch, Harry N., Sioux City
 Hirsch, Michael R., Des Moines
 Hirst, Donald V., Council Bluffs
 Hoak, John C., Iowa City
 Hodges, Robert E., Iowa City
 Hoffman, Paul M., Tipton (L.M.)
 ★Hoffman, Robert M., Jacksonville, Florida
 Hoffman, Robert W., Des Moines
 Hoggenson, George B., Eagle Grove
 Hollander, Werner M., Davenport
 Hollis, Edward L., Marengo (L.M.)
 Holman, David O., Ottumwa
 Holzworth, Paul R., Des Moines
 Hommel, Placido R. V., Elkader
 Honke, Edward M., Sioux City
 Hooley, John S., Sigourney
 Hoover, Ralph S., Waterloo
 Hopkins, David H., Des Moines (A.M.)
 Hopp, Ralph L., Council Bluffs
 Hornaday, William R., Des Moines
 Hornaday, William R., Jr., Des Moines
 Hornberger, John R., Manning
 Horsley, Arthur W., Sioux City
 Horst, Arthur W., Sioux City
 Hosford, Horace F., Burlington
 Hostetter, John I., Des Moines
 Hostetter, Mary S., West Des Moines
 Houlahan, Jay E., Mason City
 Houser, Cass T., Cedar Rapids (L.M.)
 Housholder, Harold A., Winthrop (L.M.)
 Howar, Bruce F., Webster City
 Howard, Dwayne E., Sioux City
 Howard, Lloyd G., Council Bluffs
 Howard, William F., Iowa City
 Howe, Gerald W., Iowa City
 Howell, David A., Dubuque
 Howell, Elias B., Ottumwa (L.M.)
 Hoyt, John L., Creston
 Hruska, Glen J., Belmond
 Huber, Robert A., Charter Oak
 Hubiak, John, Odebolt
 Hudek, Joseph W., Garnavillo (L.M.)
 Huey, John R., Cedar Rapids
 Huffman, William C., Iowa City
 Hughes, Parker K., Des Moines
 Hull, Charles N., Des Moines
 Hull, Gene I., Des Moines
 Hunt, Van W., Mason City
 Hunting, Ralph D., Cedar Rapids
 Huntley, Charles C., Avoca
 Hurevitz, Hyman M., Davenport
 Huston, Daniel F., Burlington
 Huston, John, Jr., Cedar Rapids
 Huston, K. Garth, Des Moines
 Huston, Marshall D., Cedar Falls
 Huston, Paul E., Iowa City
 Hutcheson, Thomas S., Ida Grove
 Hutchinson, Roy M., Fort Dodge
 Hyatt, Charles N., Corydon
 *Ihle, Charles W., Norfolk, Nebraska (L.M.)
 Ingham, Donald W., Independence
 Ingham, Paul G., Mapleton
 Ingle, Newell G., Cedar Rapids
 Ingraham, David R., Sewal (L.M.)
 Ireland, William W., Ottumwa
 Irish, Thomas J., Forest City
 Irving, Noble W., Jr., Des Moines
 Isham, Robert B., Osage
 Jack, Darwin B., Oelwein
 Jackson, James M., Fort Bragg, North Carolina (L.M.)
 Jackson, James S., Mount Pleasant
 Jacobi, Heinz S., New Hampton
 Jacobs, Carl A., Sioux City
 Jacobs, Edward L., Marshalltown
 Jacobs, James P., Iowa City
 Jacobs, John P., Mason City
 Jacobs, Richard L., Iowa City
 Jacques, Lewis H., Iowa City
 Jaenicke, Kurt, Clinton (L.M.)
 Jaggard, Robert S., Oelwein
 James, David W., Des Moines
 James, Lora D., Fairfield (L.M.)
 James, Peter E., Audubon (L.M.)
 January, Lewis E., Iowa City
 Jaquis, John R., Reinbeck
 Jardine, George A., New Virginia (A.M.)
 Jarvis, Harry D., Chariton (L.M.)
 Jaskunas, Stanley R., Bloomfield
 Jauch, Karl E., La Porte City
 Jebson, Robert H., Cedar Rapids
 Jeffries, James H., Waterloo
 Jeffries, Milo E., Marshalltown
 Jeffries, Roy R., Waukon
 Jenkins, George D., Burlington
 Jenkins, Hanley F., Des Moines
 Jenkins, Richard L., Iowa City
 Jenkinson, Harry R., Iowa City
 Jenks, Alonzo L., Jr., Des Moines
 Jensen, Arno L., Clinton
 Jensen, Kenneth V., Clarinda
 Jensen, LeRoy E., Audubon
 Jensen, Ralph, Ames
 Jerdee, Ingebrecht C., Clermont
 Jerome, Peter, Davenport
 Johann, Albert E., Des Moines (A.M.)
 Johnson, Aaron Q., Sioux City
 Johnson, Charles A., Sioux City
 Johnson, Charles O., Des Moines
 Johnson, Clarence A., Coon Rapids
 Johnson, Eugene L., Spirit Lake
 Johnson, G. Raymond, Ottumwa
 Johnson, Harvey A., Atlantic
 Johnson, Merton A., Nevada
 Johnson, Norman M., Clarinda
 Johnson, Richard M., Denison
 Johnson, Robert J., Iowa Falls
 Johnson, Robert M., Des Moines
 Johnson, Stancil E. D., Cherokee
 Johnston, C. Harlan, Des Moines
 Johnston, George B., Estherville
 Johnston, Harry L., Ames
 Johnston, Helen, Columbus Junction (A.M.)
 Johnston, Wayne A., Dubuque (A.M.)
 Jones, Cecil C., Des Moines (A.M.)
 Jones, Clare C., Spencer
 Jones, G. William, Des Moines
 Jones, Harold W., Sioux City
 Jones, Harry J., Cedar Rapids (L.M.)
 Jones, Maynard L., Colfax
 Jongewaard, Albert J., Jefferson
 Jongewaard, Robert E., Weslev
 Joranson, Robert E., Council Bluffs
 Jordan, John W., Maquoketa
 Jowett, John R., Clinton
 Joyce, George T., Mason City
 Joynt, Albert J., Waterloo (L.M.)
 Joynt, Michael F., Marcus (L.M.)
 Joynt, Robert J., Iowa City
 Judiesch, Kenneth J., Iowa City
 Juel, Einer M., Atlantic
 Kaack, Harry F., Jr., Clinton
 Kaelber, William W., Iowa City
 Kahler, Hugo V., Reinbeck (L.M.)
 Kane, Thomas E., Boone
 Kanealy, John F., Cedar Rapids
 Kanis, Stewart F., Pella
 Kapke, Franklin W., Mason City
 Kaplan, David D., Sioux City
 Kaplan, Robert M., Davenport
 Kapp, David F., Dubuque
 Karp, Leon M., Lake City
 Kasiske, Walter B., Keokuk
 *Kassmeyer, John C., Dubuque (L.M.)
 Kast, Donald H., Des Moines
 Katzmann, Frederick S., Des Moines
 Keane, Kenneth M., Sioux City
 Keech, Roy K., Cedar Rapids (L.M.)
 Keeney, George H., Mallard (L.M.)
 Keettel, William C., Iowa City
 Kehoe, Joseph L., Davenport
 ★Keil, Philip G., Washington, D. C.
 Keith, John J., Marion
 Kelberg, Melvin R., Sioux City
 Keller, Erwin F., Davenport
 Keller, John T., Iowa City
 Kelley, John H., Des Moines
 Kelley, Newell R., Des Moines
 Kelly, Alma C. B., Des Moines
 Kelly, Anthony H., Sioux City
 Kelly, Clarkson L., Jr., Charles City
 Kelly, Dennis H., Des Moines (A.M.)
 Kelly, Dennis H., Jr., Des Moines
 Kelly, John F., Sioux City
 Kelly, John F., Fort Dodge
 ★Kelly, Thomas W., Anchorage, Alaska
 Kelly, William J., Dubuque
 Kelsey, James E., Des Moines
 Kemp, Robert R., Keokuk
 Kenefick, John N., Algona
 Kennedy, Edwin D., Mason City
 Kennedy, Elizabeth S., Oelwein (L.M.)
 Kenney, Bernard E., Council Bluffs
 Kent, Robert W., Oakdale
 Kent, Thomas H., Iowa City
 Keohen, Gerald F., Dubuque
 Kepros, Peter F., Cresco
 Kern, George A., Des Moines
 Kern, Lester C., Waverly (L.M.)
 Kershner, Frank O., Clinton (A.M.)
 Kersten, Herbert H., Fort Dodge
 Kersten, John R., Fort Dodge
 Kersten, Paul M., Fort Dodge
 Kestel, John L., Waterloo
 Kettelkamp, Enoch G., Monona
 Kettelkamp, William E., Cedar Rapids
 Keyser, Earl L., Marshalltown
 Keyser, Ralph E., Marshalltown (L.M.)
 Kieck, Ernest G., Etowah, North Carolina (A.M.)
 Kiernan, Thomas E., Sioux Center
 Kiesau, Milton F., Postville
 Kiesling, Harry F., Lehigh
 Kilgore, Ben F., Des Moines
 Kimball, Glenn J., Des Moines
 Kimball, John E., West Liberty (L.M.)
 Kimberly, Lester W., Davenport
 *King, Dean H., Spencer
 King, Jack A., Ames
 King, Ross C., Clinton
 Kingsbury, Kenneth R., Ottumwa
 Kinney, Max W., Council Bluffs
 Kirch, Walter A., Des Moines
 Kirchheim, Dieter, Baltimore, Maryland
 Kirkegaard, Rodger S., Iowa City
 Kirkegaard, Virgil G., Waterloo
 Kirkendall, Walter M., Iowa City
 Kirkham, Lindsay J., Mason City
 Kirlin, Maurice W., Spirit Lake
 Kivlighn, Donald D., Sioux City
 Klein, John L., Jr., Muscatine
 Klein, Robert F., Muscatine
 Kleinberg, Henry E., Des Moines (A.M.)
 Klinge, Francis L., Cresco
 Klockslem, Harold L., Des Moines
 Klockslem, Roy G., Rockwell City
 Klok, George J., Council Bluffs
 Kluever, Herman C., Fort Dodge
 Knaack, Harvey E., Des Moines
 Knight, Benjamin L., Cedar Rapids
 Knight, Edson C., Marshalltown
 Knight, Russell A., Rockford
 Knipfer, Robert L., Jesup
 Knosp, Alton A., Jefferson
 Knosp, Norman C., Belle Plaine
 Knott, James L., Council Bluffs
 Knott, Peirce D., Sioux City
 Knox, Robert M., Des Moines
 Koch, John S., Cedar Rapids
 Koelling, Lloyd H., Newton
 Koenig, Frank J., Des Moines
 Kohrs, Edward F., Davenport
 Koob, Dean F., Algona
 Koons, Claude H., Des Moines
 Kopecky, Edward F., Cedar Rapids
 Kopsa, Walter J., Tipton
 Kordecki, Frank A., Independence
 Korner, Harold, Waterloo
 Korns, Horace M., Iowa City
 Korson, Selig M., Independence
 Kos, Clair M., Iowa City
 Koser, Donald C., Cherokee
 Kosieradzki, Henry, Marshalltown
 Kraushaar, Maurice E., Fort Dodge
 Krehl, Willard A., Iowa City
 Kretzschmar, Robert M., Iowa City
 Krettek, John E., Council Bluffs
 Krigsten, Joe M., Sioux City
 Krigsten, William M., Sioux City
 Kroack, Kalman J., Buffalo Center
 Kruckenberg, William G., Cedar Rapids
 Krueger, Norman L., Casey
 Kruml, Joseph G., Council Bluffs

Kruse, Otto E., Tipton
 Kruse, Rolf F., Waterloo
 Kruse, Rufus H., Marshalltown
 Kruse, Steven G., Slater
 Kuehn, Willard G., Clarinda
 Kugel, Robert B., Iowa City
 Kuhl, Augustus B., Jr., Davenport
 Kuhl, Robert H., Creston
 Kuker, Leo H., Carroll
 Kurtz, Cecilia M., Cedar Rapids
 Kyer, Donald L., Dubuque
 Kyle, Robert H., Cedar Falls
 Kyle, William S., Washington (L.M.)

Lackore, Leonard K., St. Ansgar
 Lagen, Mansfield S., Dubuque
 Lagoni, Ralph P., Eldridge
 Lake, Carlton B., Cedar Rapids
 LaMar, John W., Des Moines
 Lamb, Harry H., Davenport
 Lambrecht, Paul B., Des Moines
 Landhuis, Leo R., Fort Dodge
 Landry, Gerard R. F., Council Bluffs
 Langley, Roland L., Hawarden
 Lanich, Oscar K., Jr., Waterloo
 Lannon, James W., Mason City
 LaPorte, Paul A., Fort Dodge
 Lardinois, Clifford C., Burlington
 Larimer, Robert C., Sioux City
 Larimer, Robert N., Sioux City
 Larsen, Elmer A., Centerville
 Larsen, Frank S., Fort Dodge
 Larsen, Harold T., Fort Dodge
 Larsen, Lawrence V., Harlan
 Larson, Andrew G., Dickens (L.M.)
 Larson, Carroll B., Iowa City
 Larson, Erling, Jr., Davenport
 Larson, Gerald E., Elk Horn
 Larson, Lester E., Decorah
 Larson, Marvin O., Hawarden
 Larson, Robert C., Des Moines
 Larson, Walter W., Ames
 Latchem, Charles W., Des Moines
 Latimer, Milton J., Burlington
 Latourette, Howard B., Iowa City
 Laube, Paul J., Dubuque
 Lauvstad, Edward E., Osceola
 Lavender, John G., George
 Lawler, Matthew P., Jr., Des Moines
 Lawlor, Jeremiah F., Iowa City
 Lawrence, Montague S., Iowa City
 Lawson, Frank D., Iowa City
 Layton, Jack M., Iowa City
 Ledogar, Joseph A., Webster City
 Lee, Richard H., Dubuque
 Lee, Robert W., Fort Dodge
 Lee, Wayne R., Burlington
 Leehey, Paul J., Independence
 Leffert, Frank B., Centerville
 Lehman, Emery W., Bluffton, Indiana (L.M.)
 Lehman, John D., Iowa City
 Lehr, Sylvan M., Cedar Rapids
 Leibel, Lynn L., Council Bluffs
 Leinbach, Samuel P., Belmond
 Leinfelder, Placidus J., Iowa City
 Leiter, Herbert C., Sioux City
 Lekwa, Alfred H., Story City
 Lemke, Betty A. T., Des Moines
 Lemon, Kenneth M., Oskaloosa
 Lenzmeier, Albert J., Davenport
 Leonard, Thurman K., Madrid
 LePoidevin, Jean S., Waterloo
 Lerner, Ernest N., Mount Pleasant
 Lesiak, John J., Tipton
 Levy, James W., Sioux City
 Lewis, Faye C., Webster City
 Lewis, William B., Webster City
 Lichtenberg, Robert P., Keokuk
 Liechty, Richard D., Iowa City
 Lierle, Dean M., Iowa City
 Lierman, Clifford E., Lake View
 Light, Henry R., Grinnell
 Limbert, Edwin M., Council Bluffs
 Lindell, Sherman E., LeMars
 Linder, Enfred E., Ogden
 Lindholm, Claire V., Armstrong
 Lindholm, Hugo A., Armstrong
 Lindley, Ellsworth L., Cedar Rapids
 Linge, Scott, Fayette
 Linthacum, Robert W., Dysart
 Liska, Edward J., Ute
 Lister, Eugene E., Dallas Center
 Lister, Kenneth E., Ottumwa
 Llewellyn, Neal N., Iowa City
 Lloyd, John M., Washington
 Locher, Robert C., Cedar Rapids
 Lockhart, Harold A., Cedar Rapids
 Locksley, Herbert B., Iowa City
 Loock, John F., Independence
 Loeffelholz, Paul L., Fort Dodge
 Loes, Anthony M., Dubuque (L.M.)
 Lohman, Frederick H., Waterloo
 Lohmann, Carl J., Burlington
 Lohnes, John H., Cedar Rapids

Lohr, Frederick J., Sioux City
 Lohr, Phillips E., Churdam
 Long, Draper L., Mason City
 Longnecker, Daniel S., Iowa City
 Longworth, Wallace H., Boone
 Looker, Richard F., Cedar Rapids
 Loomis, Frederic G., Waterloo
 Lorfeld, Gerhard W., Davenport
 Losasso, David A., Davenport
 Losh, Clifford W., Des Moines (L.M.)
 Losh, Clifford W., Jr., Des Moines
 Lovejoy, E. Parish, Des Moines
 Lowary, Eldon K., Webster City
 Lowry, Charles F., Council Bluffs
 Lowry, Earl C., Des Moines
 Loxterkamp, Edward O., Rolfe
 Ludwig, Clarence J., Waterloo
 Luehrmann, Bernard C., Dyersville
 Luhman, Lowell A., Iowa City
 Lulu, Donald J., Des Moines
 Lynn, John R., Iowa City
 Lyons, Mary L., Des Moines

MacGregor, John K., Mason City
 MacLeod, Hugh G., Greene
 MacQueen, John C., Iowa City
 McAllister, William G., Manly
 McBride, Donald F., Des Moines
 McBride, Robert H., Sioux City
 McCaffrey, Eugene H., Des Moines (A.M.)
 McCall, John H., Allerton (L.M.)
 McCandless, Robert G., Iowa City
 McCarroll, James G., Fort Dodge
 McCarthy, Frank D., Sioux City
 McClean, Earl D., Des Moines (L.M.)
 McClellan, John W., Onawa
 McClung, Robert R., Knoxville
 McClurg, Frank H., Fairfield
 McConkie, Edwin B., Cedar Rapids
 McConnell, Robert W., Davenport
 McCool, Robert F., Clarion
 McCormack, William C., Ames
 McCoy, Harold J., Des Moines
 McCoy, John T., Cedar Falls
 McCoy, Robert E., Mason City
 McCrary, W. Ashton, Lake City
 McCreehy, Murry L., Washington
 McCreight, George C., Carmel Valley, California (A.M.)
 McCuiston, Harry M., Sioux City
 McDonald, Don J., Cedar Rapids
 McEleney, Donald A., Cedar Rapids
 McElwain, John J., Burlington
 McFadden, F. Ross, Davenport
 McFarland, Guy E., Jr., Ames
 McFarland, Julian E., Ames (A.M.)
 McFarlane, Donald J., Dubuque
 McFarlane, John A., Sioux City
 McGarvey, Cornelius J., Des Moines
 McGee, John E., Fort Madison
 McGilvra, Arthur L., Sioux Center
 McGinnis, George C., Fort Madison
 McGrane, Merle J., New Hampton (A.M.)
 McGuire, Kenneth L., Keota
 McHugh, Charles P., Sioux City (L.M.)
 McIlce, Raymond C., Fort Madison
 McIntosh, Philip D., Ottumwa
 McIntyre, Caryl C., Waterloo
 McKay, Kenneth H., Davenport
 McKay, Richard V., Jr., Dubuque
 McKean, Frank F., Allison
 McKee, Albert P., Iowa City
 McKitterick, John C., Burlington
 McLaghlain, Philip A., Coralville
 McMahon, Arthur E., Jr., Mason City
 McMahon, John M., Iowa City
 McMahon, Thomas, Clinton (L.M.)
 McMeans, Thomas W., Davenport
 McMillan, George J., Fort Madison
 McMillan, James T., Des Moines
 McMurray, Edward A., Newton
 McMurray, Harry N., Burlington
 McNamara, Robert J., Dubuque
 McNamee, Jesse H., Des Moines
 McQuiston, J. Stuart, Cedar Rapids
 McTaggart, William B., Fort Dodge
 McVay, Melvin J., Lake City
 Magaret, Ernest C., Glenwood
 Magee, Emery E., Waterloo (L.M.)
 Maher, Louis L., Des Moines
 Mahoney, James D., Council Bluffs
 Mailliard, Robert E., Storm Lake
 Maixner, Reynold R., Ottumwa
 Maixner, William D., Ottumwa
 Maland, Donald O., Cresco
 Maltry, Emile, Jr., Fort Dodge
 Manderscheid, Robert A., Boone
 Mangan, J. Thomas, Forest City
 Manning, Ephraim L., Davenport
 Manoles, Elias N., Rochester, Minnesota
 Maplethorpe, Charles W., Toledo (L.M.)
 Maplethorpe, Charles W., Jr., Toledo
 Marble, Edwin J., Marshalltown
 Marble, Willard P., Marshalltown

Margolis, Irving B., Des Moines
 Margules, Maurice P., Council Bluffs
 Margulies, Harold, New York, New York
 Marinos, Harry G., Mason City
 Maris, Cornelius, Sanborn
 Mark, Edward M., Clarksville
 Mark, Milton S., Des Moines
 Marker, John I., Davenport
 Markham, William S., Harlan
 Marme, George W., DeWitt
 Marquis, Fred M., Waterloo
 Marquis, George S., Des Moines
 Marriott, Charles M., Sioux City
 Marsh, Frederick E., Council Bluffs
 Marsh, Frederick E., Jr., Council Bluffs
 Marshall, Lawrence L., Jefferson
 Martin, James W., Holstein
 Martin, Josef R., Carroll
 Marty, Sophocles D., Mason City
 Mason, Edward E., Iowa City
 Mast, Truman M., Washington
 Mater, Dwight A., Knoxville
 Mathiasen, Aileen, Council Bluffs
 Mathiasen, Emmett B., Council Bluffs
 Mathiasen, Henning W., Council Bluffs
 Mathiasen, John W., Council Bluffs
 Matthews, Alexander, Mason City
 Matthey, Carl H., Davenport
 Matthey, Walter A., Bettendorf (L.M.)
 Mattice, Roger J., Sioux Rapids
 Maughan, John F., Baxter
 Maxwell, Charles T., Sioux City (L.M.)
 Maxwell, John R., Iowa City
 May, George A., Forest Grove, Oregon (A.M.)
 Mayer, Paul D., Cherokee
 Mazur, Theodore T., Burlington
 Meffert, Clyde B., Cedar Rapids
 Meger, Robert F., Victor
 Megorden, William H., Mount Pleasant
 Mehrl, William J., Cascade
 Meister, Philippine, Des Moines
 Melampy, C. Nelson, Ottumwa
 Melgaard, Robert T., Dubuque
 Melichar, Paul J., Garner
 Mellen, Robert G., Clinton
 Merchan, Gloria, Des Moines
 Merrillat, Herbert C., Des Moines
 Merkel, Byron M., Des Moines
 Merritt, Arthur M., Des Moines (L.M.)
 Merritt, F. Benjamin, Dubuque
 Merritt, James O., Fort Des Moines
 Merselis, Harold K., Audubon
 Merulla, Charles A., Marion
 Meservey, Maynard A., Jr., Des Moines
 Metzner, Franz N., Dubuque
 Meyer, Alfred K., Clinton
 Meyer, Robert J., Wellsburg
 Meyers, Frank W., Dubuque (L.M.)
 Meyers, Paul T., Bloomfield
 Meyers, Robert P., Ottumwa
 Michaelson, Beryl F., Dakota City
 Michaelson, Manly, Bellevue
 Michel, Gene E., Sac City
 Michelfelder, Theodore J., Fort Dodge
 Middleton, William H., Cedar Rapids
 Mikelson, Clarence J., Waterloo
 Miller, Chester I., Iowa City
 Miller, Donald F., Williamsburg
 Miller, Enos D., Wellman (L.M.)
 Miller, Garfield, Calmar
 Miller, Herbert P., Jr., Iowa City
 Miller, Howard L., Cedar Rapids
 Miller, Jay R., Wellman
 Miller, Keith E., Agency
 Miller, Lawrence A., North English
 Miller, Lawrence A., II, North English
 Miller, Richard L., Waterloo
 Miller, Robert C., Waterloo
 Miller, Rodney H., Sac City
 Miller, Temple M., Muscatine
 Mills, Keith F., Lone Tree
 Miltner, Leo J., Davenport
 Minassian, Thaddeus A., Des Moines (L.M.)
 Mincks, James R., Bloomfield
 Mirick, Donald F., Clinton
 Mitchell, Claire H., Cincinnati (L.M.)
 Mitchell, Duane E., Mount Ayr
 Mitchell, Richard C., Waterloo
 Moberly, John W., Dubuque
 Mochal, John L., Independence
 Modaff, Walter L., Des Moines
 Moeller, Jay A., Dubuque
 Moen, Stanley T., Cedar Rapids
 Moermond, James O., Buffalo Center
 Moershel, Henry G., Homestead
 Moershel, William J., Cedar Rapids
 Moes, John R., Waterloo
 Moessner, Harold, Amana
 Moles, Marvin R., Newton
 Monahan, Joseph L., Clinton
 Monnig, Philip J., Sioux City
 ★Montgomery, Albert E., New York, New York

- Montgomery, George E., Ames
 Montgomery, Guy E., Washington
 Montz, Fred, Lowden
 Moon, Barclay J., Scottsdale, Arizona
 Mooney, James C., Des Moines
 Moore, Carlyle C., Emmetsburg
 Moore, Edson E., Fort Dodge
 Moore, Jesse C., Eldon (L.M.)
 Moore, Pauline V., Iowa City
 Moore, Richard M., Des Moines
 Moorehead, Harold B., Underwood
 Mordaunt, Richard H., Nevada
 Morgan, Dale D., Cedar Rapids
 Morgan, Harold W., Mason City
 Morgan, Jack N., Fairfield
 Morgan, Paul W., Mason City
 Morgan, Rex L., Sioux City
 Morgenthaler, Otis P., Templeton (L.M.)
 Moriarty, Darwin L., Council Bluffs
 Morrison, John R., Des Moines
 Morrison, Robert E., Waterloo
 Morrison, Roland B., Carroll
 Morrissey, George E., Davenport
 Morrissey, William J., Des Moines
 Mosher, Martin L., Jr., Iowa City
 Motto, Edwin A., Davenport
 Mountain, George E., Des Moines
 Moyers, Jack, Iowa City
 Mugan, Robert C., Sioux City
 Mulsow, Frederick W., Cedar Rapids
 Mumford, Earl M., Sioux City
 Munger, Albert E., Jr., Spencer
 Munns, Richard E., Hampton
 Murphey, Arlo L., Fredericksburg
 Murphy, Cornelius B., Alton
 Murphy, George C., Waterloo
 Murphy, Robert E., Fort Madison
 Murphy, Thomas W., Mount Pleasant
 Murray, Frederick G., Cedar Rapids (L.M.)
 Murray, Jonathan H., Burlington
 Murtaugh, James E., New Hampton
 Myerly, William H., Des Moines
 Myers, Frank L., Charles City
 Myers, Kermit W., Sheldon
 Myers, Robert W., Monticello
 Nafziger, Ezra G., Battle Creek
 Nakashima, Victor K., Dubuque
 Napier, John G., Iowa City
 Nash, Warren, Waterloo
 Neal, Emma J., Cedar Rapids (L.M.)
 Needles, Roscoe M., Atlantic
 Neff, Herbert, Guthrie Center
 Neglia, Fortunato J., Maxwell
 Neligh, Gordon L., Jr., Council Bluffs
 Nelken, Leonard, Clinton
 Nelson, Arnold L., Des Moines
 Nelson, F. Lawrence, Ottumwa
 Nelson, James W., Newton
 Nelson, Leo C., Jefferson
 Nemec, Joseph J., Cedar Rapids
 Nemmers, Gerald J., Washington
 Nemmers, Julian G., Dubuque
 Nessa, Curtis B., Burlington
 Netolicky, Robert Y., Cedar Rapids
 Neuzil, William J., Cedar Rapids (L.M.)
 Newland, Don O., Des Moines
 Nicoll, Charles A., Panora
 Nielsen, Arnold T., Ankeny
 Nielsen, Glen E., Des Moines
 Nielsen, Raymond M., Charles City
 Nielsen, Rudolph F., Cedar Falls
 Nierling, Paul A., Cresco
 Nitzke, Everett A., Des Moines
 Niver, Edwin O., Clarinda
 Noble, H. Dudley, Davenport
 Noble, Nelle S., Des Moines (L.M.)
 Noble, Rusl P., Alta
 Nocella, Reynold A., Independence
 Nolan, John C., Corning
 Noonan, James J., Marshalltown
 Nord, Donald H., Cambridge
 Nordin, Charles A., Des Moines
 Nordschow, Carleton D., Iowa City
 Norris, Albert S., Iowa City
 Norris, Lewis D., Newton
 Northup, Maurice, Humboldt
 Noun, Louis J., Des Moines
 Noun, Maurice H., Des Moines
 Nyquist, David M., Eldora
 Ober, Frank G., Burlington
 O'Brien, Lyl J., Fort Dodge
 O'Brien, Stephen A., Mason City (L.M.)
 O'Brien, Stephen A., Jr., Dubuque
 O'Connor, Edwin C., New Hampton
 O'Donnell, Joseph E., Clinton
 Oelrich, Carl D., Sioux Center
 Oestreicher, Harry, Independence
 Oggel, Herman D., Waterloo (L.M.)
 O'Keefe, Paul T., Waterloo
 O'Leary, Francis B., Sibley
 Olin, Elvin E., Dubuque
 Olsen, Dennis R., New Hampton
 Olsen, Martin I., Des Moines (L.M.)
 Olsen, Max E., Minden
 Olson, Randal E., Muscatine
 Olson, Stewart O., Des Moines
 O'Neal, Harold E., Tipton
 Onnen, Dale R., Newton
 Orcutt, Paul E., Marion
 Orelup, Don N., Albia
 Ortiz, Rafael I., Des Moines
 Ortmeier, Donald W., San Rafael, California
 Orton, Lawrence C., Mason City
 Orvis, Roger C., Dubuque
 Osborn, C. Robert, Dexter
 Osincup, Paul W., Sioux City
 Osten, Burdette H., Northwood
 O'Toole, Laurence C., LeMars
 Ottilie, Donald J., Oelwein
 Otto, Paul C., Fort Dodge
 Overton, Roy W., Des Moines
 Owca, Anthony S., Centerville
 Owen, William E., St. Ansgar
 Ozaydin, Ismail M., Council Bluffs
 Packard, Douglas K., Dubuque
 Pahlas, Henry M., Rockford, Illinois (L.M.)
 Paige, Ralph T., LaPorte City
 Palmer, Carson W., Guttenberg (A.M.)
 Palmer, Howard C., West Liberty
 Palmer, Russell H., Postville
 Palumbo, Louis T., Des Moines
 Pansegrau, Duane, Iowa City
 Paragas, Modesto R., Creston
 Parish, John R., Grinnell
 Parish, Havner H., Sioux City
 Parke, John, Cedar Rapids
 Parker, Loran F., Iowa Falls
 Parker, Robert L., Des Moines (L.M.)
 Parks, Claude O., Iowa City
 Parks, John L., Muscatine
 Parson, Victor G., Des Moines
 Parsons, Earl, Burlington
 Parsons, John C., Des Moines
 Paschal, George A., Webster City
 Pascoe, Paul L., Carroll
 Pasterak, George E., Mount Pleasant
 Patterson, Robert K., Conrad
 Patterson, Roy A., Webster City
 Paul, Jed, Creston
 Paul, John D., Anamosa
 Paul, Richard E., Des Moines
 Paul, William D., Iowa City
 Paulsen, Herbert B., Harris
 Paulson, Jerome F., Mason City
 Paulus, Edward W., Iowa City
 Pearlman, Leo R., Des Moines
 Pearson, George J., Burlington
 Peart, John C., Knoxville
 Peasley, Harold R., Des Moines
 Pedersen, Arthur M., Council Bluffs
 Pedersen, Paul D., Council Bluffs
 Pfeffer, Peter A., Woodward
 Peisen, Conan J., Des Moines
 Pelz, Werner P., Charles City
 Penly, Don H., Cedar Falls
 Perel, Ada R., Des Moines
 Perkins, Franklyn C., Hedrick
 Perkins, Rollin M., Davenport
 Perley, Arthur E., Waterloo
 Perrin, William D., Sumner
 Pester, George H., Council Bluffs
 Petersen, Donal C., Burlington
 Petersen, Emil C., Atlantic
 Petersen, Millard T., Atlantic
 Petersen, Robert E., Dubuque
 Petersen, Vernon W., Clinton
 Peterson, Byron E., Mount Pleasant
 Peterson, Charles R., Des Moines
 Peterson, Elroy R., Ames
 Peterson, Evan A., Burlington
 Peterson, Frank R., Cedar Rapids
 Peterson, John C., Hartley
 Peterson, Loren G., Des Moines
 Peterson, Magnus, Cherokee
 Peterson, Ray W., Clear Lake
 Peterson, Richard E., Iowa City
 Peterson, Richard J., Panora
 Pettipiece, Clayton, Shenandoah
 Pfaff, Robert A., Dubuque
 Pfeiffer, Donald W., McGregor
 Pfeiffer, Harry E., Riviera Beach, Florida (L.M.)
 Pfohl, Anthony C., Dubuque
 Phelan, Mary Patricia, Altoona
 Phelps, Gardner D., Waterloo
 Phelps, Richard E. H., New Sharon
 Pheteplace, Willard S., Davenport
 Phillips, Allan B., Des Moines
 Phillips, Clarence P., Muscatine
 Phillips, Walter B., Montezuma
 Piburn, Marvin F., Salisbury, South Rhodesia, Africa
 Piekenbrock, Frank J., Dubuque
 Piekenbrock, Thomas C., Dubuque
 Piercy, Kenneth C., Ames
 Pierson, Lawrence E., Sioux City
 Pietrzak, Julius, Cedar Rapids
 Ping, Er Chang, Woodward
 Pitcher, Arlo L., Belmond
 Pitluck, Harry L., Laurens
 Plager, Vernon H., Waterloo
 Plankers, Arthur G., Dubuque
 Plott, Carol L., Algona
 Poepsel, Frank L., West Point
 Polit, Jaime, Fort Madison
 Ponseti, Ignacio V., Iowa City
 Poore, Samuel D., Villisca
 Porter, Lawrence W., Indianola
 Porter, Philip M., New Hampton
 Porter, Richard C., Des Moines
 Porter, Robert J., Des Moines
 Porter, S. Dale, Grinnell
 Posner, Edward R., Jr., Des Moines
 Posner, Edward R., Sr., Des Moines (L.M.)
 Potter, Paul H., Mason City
 Powell, Adrian R., Elkader
 Powell, Robert M., Mason City
 Powell, Robert V., Kingsley
 Powers, George H., Shenandoah
 Powers, Henry R., Emmetsburg
 Powers, Ivan R., Waterloo
 Powers, John L., Estherville
 Powers, William J., Iowa City
 Preacher, Charles B., Davenport
 Preece, Wade O., Waterloo
 Presbrey, Richard B., Independence
 Prescott, Kenneth H., Storm Lake
 Presnell, William H., Charlotte
 Prewitt, Leland H., Ottumwa
 Priestley, Joseph B., Des Moines
 Proctor, Rothwell D., Cedar Rapids
 Proffitt, Gail A., McClure, Ames
 Prouty, James V., Cedar Rapids
 Province, William, Jr., Dubuque
 Ptacek, Joseph L., Webster City
 Pugh, Philip F. H., Sioux City
 Pumphrey, Loira C., Keokuk
 Puntennay, Andrew W., Boone
 Purdy, William O., Des Moines
 Purnell, Glenn B., Des Moines
 Quetsch, Richard M., Cedar Rapids
 Radcliffe, Christian E., Iowa City
 Radicia, Lucy M., Council Bluffs
 Rahn, Gordon E., Mount Vernon
 Rainy, Curtis W., Elma
 Ralston, Furman P., Knoxville
 Ramsaran, James P., Clarinda
 Ramsdell, Stuart T., Joliet, Illinois
 Randall, Ross G., Waterloo
 Randall, William L., Hampton
 Randolph, Aaron P., Anamosa
 Rankin, Isom A., Iowa City
 Rankin, John R., Keokuk
 Rankin, William, Keokuk (L.M.)
 Rapagnani, Joseph A., Indianola
 Rassekh, Hormoz, Council Bluffs
 Rater, David L., Ottumwa
 Rathe, Herbert W., Waverly
 Rathe, James W., Waverly
 Rausch, Gerald R., Sioux City
 Ravreby, Mark D., Des Moines
 Read, Charles H., Iowa City
 Reading, Donald S., Marshalltown
 Readinger, Harry M., New London
 Redfield, Earl L., Des Moines
 Redmond, James J., Cedar Rapids
 Reed, Robert J., Des Moines
 Reeder, James E., Glendale, California (L.M.)
 Reeder, James E., Jr., Sioux City
 Reedholm, Edwin A., Grundy Center
 Reeves, Lane A., Albia
 Regnier, Walter O., Mount Pleasant
 Reibold, Frank W., Carroll
 Reimers, Robert S., Fort Madison (L.M.)
 Reinertson, Jim W., Cedar Rapids
 Rembolt, Raymond R., Iowa City
 Rence, William G., Mason City
 Reque, David G., Cedar Rapids
 Reuber, Roy N., Mason City
 Reuling, Frank H., Waterloo
 Reyes, Luis A., Des Moines
 Rhodes, John M., Pocahontas
 *Rice, Floyd W., Des Moines (L.M.)
 Richard, Clysta A., Des Moines
 Richardson, Francis H., Council Bluffs
 Richey, Granville L., Centerville
 Richmond, Arthur C., Fort Madison
 Richmond, Frank R., Fort Madison
 Richmond, Frank R., Jr., Fort Madison
 Richmond, Paul C., New Hampton
 Richter, Harold J., Albia
 Ridenour, Edward J., Waterloo
 Riecke, William C., Des Moines
 Riegelman, Ralph H., Des Moines
 Rieniets, John H., Cedar Rapids
 Rindskopf, Wallace, Des Moines
 Ringdahl, Irving, Elkader

- Ritter, Eugene F., Centerville
 Ritter, John A., Ottumwa
 Robb, William J., Cedar Rapids
 Roberts, C. Ronald, Dysart
 Roberts, Justus B., Ottumwa
 Roberts, Richard W., Des Moines
 Robertson, Treadwell A., West Liberty
 Robinson, Beverly, Des Moines
 Robinson, Ray G., State Center
 Robinson, Van C., Des Moines
 Robinson, Harry V., Sioux City
 Rock, J. Gordon, Davenport
 Rock, John E., Bettendorf
 Rock, William K., Waterloo
 Rockwell, Maryelda, Clinton
 Rodabaugh, Kenneth D., Tabor
 Rodawig, Don F., Spirit Lake
 Rodawig, Donald F., Jr., Spirit Lake
 Roddy, Harold J., Mason City
 Rogers, Claude B., Earlville (L.M.)
 Rohlf, Edward L., Jr., Waterloo
 Rohrbacher, William M., Iowa City
 Rohwer, Roland T., Sioux City
 Rolfs, Floyd O., Parkersburg
 Rolfs, Fred A., Aplington
 Romano, Anthony M., Neola
 Rominger, Clark R., Waukon
 Rooney, Joseph M., Algona
 Rose, Alvin A., Story City (L.M.)
 Rose, Joseph E., Grundy Center
 Rosebrook, Lee E., Ames
 Rosenberg, Harlan K., Iowa City
 Rosendorff, Charlotte, Davenport
 Ross, Arthur J., Jr., Perry
 Rossi, Nicholas, Iowa City
 Rost, Glenn S., Lake City
 Rotkow, Maurice J., Des Moines
 Roudybush, William B., Muscatine
 Roules, J. Frederic, Mediapolis
 Roverud, Eleanor, Carroll
 Rovine, Byron W., Davenport
 Rowley, Robert D., Burlington
 Rowley, William G., Sioux City (L.M.)
 Rowney, George W., Sioux City
 Royal, Malcolm A., Des Moines (L.M.)
 Rozeboom, Earl G., Winterset
 Rudersdorf, Howard E., Sioux City
 Rusk, Ross P., Dubuque
 Russell, Elwood P., Burlington
 Russell, John, Santa Barbara, California (L.M.)
 Russell, Ralph E., Waterloo (L.M.)
 Rust, Emery A., Webb (L.M.)
 Ruth, Verl A., Des Moines
 Ryan, Allen J., Harlan
 Ryan, James W., Jr., Des Moines
 Ryan, Robert A., Fairfield
- Saar, Jesse L., Donnellson (L.M.)
 Saar, Jesse L., Jr., Burlington
 Saar, John W., Keokuk
 Safley, Max W., Forest City
 Safranek, Edward J., Fort Dodge
 Sahs, Adolph L., Iowa City
 Samani, Reuben, Akron
 Sampson, Carl E., Creston
 Samter, Bernhard, Mount Pleasant
 Sand, Bernard F., Waterloo
 Sanders, Donald C., Independence
 Sanders, George E., Miami, Florida (L.M.)
 Sanders, Matthew G., Fort Dodge
 Sanders, William E., Tucson, Arizona (L.M.)
 Sands, Sidney L., Des Moines
 Sands, W. Wayne, Philadelphia, Pennsylvania
 Sarff, Floyd G., Logan
 Sartor, Guido J., Mason City
 Satrang, Geraldine, Sioux City
 Sattler, Dwight G., Kalona
 Sauer, Harold E., Marshalltown
 Saunders, John A., Des Moines
 Sautter, Robert A., Mount Vernon
 Sawyer, Thomas R., Cedar Rapids
 Saxton, Norval L., Oskaloosa
 Scanlan, George C., Clinton
 Scanlon, George H., Iowa City
 Schacht, Norman A., Fort Dodge
 Schaeferle, Lawrence G., Gladbrook
 Schaeferle, Martin J., Eagle Grove
 Schafer, Leander H., DeWitt
 Schaffner, Rome L., Cedar Rapids
 Scharle, Theodore, Dubuque (A.M.)
 Schedl, Harold P., Iowa City
 Scheeres, Jacob W., Des Moines
 Scheffel, Melvin L., Malvern
 Scheibe, John R., Bloomfield
 Schill, Austin E., Des Moines
 Schissel, Donald J., Des Moines
 Schlaser, Verne L., Des Moines
 Schlichtemeier, Ellis O., Spencer
 Schmiedel, Edward E., Charles City
 Schmitt, Germain L., Cedar Rapids
 Schmitt, Donald D., Des Moines
 Schnug, George E., Dows (L.M.)
- Scholl, Charles R., Cedar Rapids
 Schoonover, Richard, Bloomfield
 Schriber, Harold L., Fort Madison
 Schrock, Christian E., Iowa City
 Schroeder, Adrian J., Marshalltown
 Schroeder, Leslie V., Walcott
 Schropp, Rutledge C., Des Moines
 Schuchmann, John D., Cedar Rapids
 Schueller, Charles J., Dubuque
 Schultz, Ivan T., Humboldt
 Schultz, Nelle E. T., Humboldt
 Schulze, Robert R., West Union
 Schupp, Joseph G., Jr., Des Moines
 Schutter, John M., Algona
 Schwaegler, Robert R., Dubuque
 Schwartz, Charles, Cedar Rapids
 Schwartz, John W., Sioux City
 Schwartz, Louis, Iowa City
 *Schwid, Steven A., Sioux City
 Sciortino, Aileen E. M., Council Bluffs
 Sciortino, Arthur L., Council Bluffs
 Scott, Paul W., Ottumwa
 Scott, Phillip A., Spirit Lake
 Scoville, Victor T., Sioux City
 Sear, John, Alden
 Sebek, Roy O., Fort Dodge
 Sedlacek, Leo B., Cedar Rapids (A.M.)
 Sedlacek, Richard L., Cedar Rapids
 Sedlacek, Robert A., Cedar Rapids
 Seeborn, Paul M., Iowa City
 Seely, Harmon D., Cherokee
 Seibert, Cecil W., Waterloo
 Seidler, William A., Jr., Jamaica
 Selo, Rudolph A., Council Bluffs
 Senft, Otto E., Monticello
 Senska, Frank, Iowa City (A.M.)
 Senty, Elmer G., Davenport
 Severson, George J., Slater (L.M.)
 Severson, Wayne L., Slater
 Shafer, Arthur W., Davenport
 Shagass, Charles, Iowa City
 Shank, Raymond A., Cedar Rapids
 Sharpe, Donald C., Dubuque
 Shaw, David F., Britt
 Shaw, Robert E., Waverly
 Shea, Thomas E., Storm Lake
 Sheehan, Daniel J., Cherokee
 Sheeler, Ivan H., Marshalltown
 Sheets, Raymond F., Iowa City
 Shepherd, Loyd K., Des Moines
 Shepherd, Ralph H., Monona
 Sherman, Richard C., Los Angeles, California (L.M.)
 Sherman, Robert B., McKinney, Texas
 Shiffer, H. Kirby, Des Moines
 Shinkle, William C., Des Moines
 Shonka, Thomas E., Clarinda
 Shope, Charles D., Greenfield
 Shore, Joseph R., Davenport
 Shreffler, James L., Waterloo
 Shulman, Herbert, Waterloo
 Shultz, William T., Marshalltown
 Shurts, John J., Eldora
 Sibley, Edward H., Sioux City
 Sibley, John A., Ames
 Silk, Marvin, Des Moines
 Simpson, Roger A., Iowa City
 Simmons, Ralph R., Des Moines (A.M.)
 Singer, John R., Newton
 Singer, Siegmund F., Ottumwa
 Sinn, Irving J., Williamsburg
 Sinning, John E., Marshalltown
 Sinning, John E., Jr., Iowa City
 Sisk, James A., Iowa City
 Sitz, Edward J., Waterloo
 Skallerup, Glenn M., Red Oak
 Skelley, Paul B., Jr., Dubuque
 Skinner, Homer L., Carroll
 Skopec, Francis M., Cedar Rapids
 Skorey, George R., Sioux City
 Skultety, F. Miles, Iowa City
 Skultety, James A., Des Moines
 Sloan, Fred R., Waterloo
 Sloan, Fredric J., Cedar Rapids
 Sloan, Morris G., Boone
 Sloan, Roy C., Mount Pleasant
 Sloterdijk, Yme, Knoxville
 Smazal, Stanlev F., Davenport
 Smead, Leslie L., Newton (L.M.)
 Smiley, George W., Ottumwa
 Smiley, Ralph E., Mason City
 Smith, Alfred N., Des Moines
 Smith, Andrew C., Waterloo
 Smith, Andrew D., Pringhar
 *Smith, Cecil R., Wyoming
 Smith, Clyde J., Gilmore City
 Smith, Elmer M., Eagle Grove
 Smith, Eugene, Waterloo
 Smith, Herman J., Des Moines
 Smith, Ian M., Iowa City
 Smith, J. Lawrence, Ames
 Smith, James W., Iowa City
 Smith, J. Ned, Iowa City
 Smith, Jeanne M., Iowa City
 Smith, John E., Clarence (L.M.)
 Smith, Lawrence D., Des Moines
- Smith, Lloyd D., Council Bluffs
 Smith, Richard T., Davenport
 Smith, Richard W., Clarion
 Smith, Robert A., Albia
 Smith, Robert J., Des Moines
 Smith, Robert T., Granger
 Smith, Rodger B., Mason City
 Smith, S. Rodmond, Red Oak
 Smith, Sidney A., Oskaloosa
 Smrha, James A., Cedar Rapids
 Smythe, Arnold M., Des Moines
 Snyder, Raleigh R., Des Moines (L.M.)
 Socarras, Alfredo D., Des Moines
 Sohm, Herbert A., Des Moines
 Soiseth, Robert P., Iowa City
 Sokol, Charles R., State Center
 Sones, Clement A., Des Moines
 Soper, Robert T., Iowa City
 Sorensen, Elmer M., Red Oak
 Sorensen, Aral C., Davenport
 Sorensen, Kermit R., Sabula
 Southwick, William W., Marshalltown
 Spear, William, Oakdale
 Spearing, Joseph H., Harlan
 Speers, James F., Des Moines
 Spellman, Carol L., Des Moines
 Spellman, George G., Sioux City
 Spencer, John H., Muscatine
 Spencer, William A., Osage
 Sperry, Frederick S., Clarinda
 Spevak, Jack J., Des Moines
 Spillman, Harold A., Ottumwa (L.M.)
 Spohnheimer, L. Nelson, Leon
 Springer, Floyd A., Des Moines
 Sprowell, Robert, Ames
 Stamler, Frederic W., Iowa City
 Stansbury, John E., Santa Barbara, California (A.M.)
 Staples, Lawrence F., Des Moines
 Stark, Cal H., Cedar Rapids
 Stark, Frederick M., Sioux City
 Starr, Charles F., Mason City (L.M.)
 Starry, Allen C., Sioux City (A.M.)
 Stauch, Martin O., Moorhead (L.M.)
 Stauch, Omar A., Sioux City
 Steenrod, Emerson J., Iowa Falls
 Steffens, Lincoln F., Dubuque
 Steffy, Fred L., Keokuk
 Stegman, Jacob J., Marshalltown
 Steimel, Kenneth P., Charles City
 Steinbeck, William H., Keystone
 Stephen, Paul, Cedar Rapids
 Stephens, Ralph R., Des Moines
 Stepp, James K., Manchester (L.M.)
 Sternagel, Fred, West Des Moines
 Sternhill, Isaac, Council Bluffs
 Stevens, Clark W., Dubuque
 Steves, Richard J., Des Moines
 Stewart, John H., Ottumwa
 Stewart, John K., Clinton
 Stickler, Robert B., Des Moines
 Stiles, James F., Des Moines
 Stimac, Emil M., Davenport
 Stinard, Charles D., Glenwood
 Stine, Earle J., Jr., Marcus
 Stinson, Alice C., Estherville (L.M.)
 Stitt, Paul L., Fort Dodge
 Stoakes, Charles S., Lime Springs (L.M.)
 Stockdale, John C., Burlington
 Stoikovic, Joseph P., Burlington
 Stone, Daniel B., Iowa City
 Storck, Robert D., Dubuque
 Strand, Clarence M., Dubuque
 Stratman, Clarence A., Sac City
 Straub, Joseph J., Dubuque
 Straumanis, Janis, Solon
 Straumanis, John J., Iowa City
 Strawn, John T., Vinton (L.M.)
 Strong, Kirk H., Fairfield
 Strottmann, Merlin P., Iowa City
 Stroy, Donald T., Council Bluffs
 Stroy, Herbert E., Osceola
 Stueland, Alvin J. R., Mason City
 Stuelke, Richard G., West Branch
 Stumme, Ernest H., Denver
 Stumme, Luther P., Denver
 Sullivan, Daniel J., Marshalltown
 Sullivan, John E., Des Moines
 Sulzbach, John F., Burlington
 Summers, Thomas B., Des Moines
 Sun, Kuei shu, Ames
 Sunderbruch, John H., Davenport
 Sunner, Gerald C., Fort Dodge
 Sutton, Gerald H., Jr., Boone
 Sutton, James C., Boone
 Svendsen, Reinert N., Keokuk
 Swanson, Eric M., Fort Dodge
 Swanson, Gerald W., Lamoni
 Swanson, Keith R., Hull
 Swanson, Leslie W., Mason City
 Swayze, V. Warren, Muscatine
 Sweem, Donald L., Belmond
 Sweeney, Lloyd J., Sanborn
 *Swenson, James D., Osage
 Swift, Frederick J., Jr., Maquoketa
 Synhorst, John B., Des Moines (A.M.)

Syverud, John M., Davenport	Van Zee, Gene K., Pella	Whitley, Ralph L., Osage (L.M.)
Tait, John H., Des Moines (A.M.)	Varga, Laszlo, Iowa City	Whitmer, Lysle H., Muscatine (A.M.)
Talley, Robert B., Iowa City	Vaubel, Ellis K., Estherville	Whitmire, James E., Sumner
Tamisia, Francis X., Missouri Valley	Vaughan, William R., New London	Wichern, Homer E., Des Moines
Tammes, Arnold R., Iowa City	Vegors, Stanley H., Mason City	Wicklund, Maurice M., Waterloo
*Taylor, Charles B., Claremont, California (L.M.)	Veley, Robert W., Cedar Rapids	Wicks, Ralph L., Boone
Taylor, Donald E., Stuart	Verduyn, Wouter H., Reinbeck	Widmer, James G., Wayland
Taylor, James H., Clinton	Vernon, Robert G., Dubuque	Widmer, Reuben B., Winfield
Taylor, Maude, Ottumwa (L.M.)	Victorine, Edward M., Cedar Rapids	Wiedemeier, Joseph L., Sioux City
Taylor, Robert S., Davenport (L.M.)	Villa, Jose E., Mount Pleasant	Wiemers, Eugene L., Cherokee
Taylor, Wendel W., Sheffield	Viner, Thomas R., Leon	Wigdahl, Lowell C., Emmetsburg
Tegler, Wayne J., Iowa City	Vineyard, Thomas L., Ottumwa (L.M.)	Wilcox, Delano, Malcom (L.M.)
Teigland, Joel D., Des Moines	Voigt, Ernest J., Burlington (A.M.)	Wilcox, Dwain E., Atlantic
Telfer, William L., Waterloo	Voigt, Franz O. W., Oskaloosa	Wilcox, Edgar B., Oskaloosa (L.M.)
Tempel, Paul F., Independence	von Lackum, J. Kenneth, Cedar Rapids	Wilcox, Keith E., Muscatine
Teufel, John C., Davenport (L.M.)	von Noorden, Gunter K., Iowa City	Wilcox, Kenneth M., Tanganyika, East Africa
Thaler, David, Cedar Rapids	Vorhes, Carl E., Sheldon	Wilcox, Robert A., Iowa City
Thatcher, Wilbur C., Fort Dodge	Vorisek, Elmer A., Des Moines	Wildberger, William C., Perry
Theilen, Ernest O., Iowa City	Vosika, Edward J., Washington	Wilhelmi, Raymond W., Sioux City
Thielen, Edward W., Waterloo	Waggoner, Charles V., Clinton	Wiley, Alden F., Waukon
Thielen, John B., Fonda	Wagner, Donald J., Sioux City	Wilke, Frank A., Perry
Thoman, William S., Sioux City	Wagner, Eugene C., Plainfield	Wilker, Richard F., Creston
Thomas, Clyde E., Croton-on-Hudson, New York (L.M.)	Wahrer, Frederick L., Marshalltown	Willett, Wilton J., Manchester
Thomas, Colin G., Monticello (L.M.)	Wainwright, Max T., Sioux City	Williams, Lawrence B., Santa Barbara, California
Thomas, James H., Sibley	Waldorf, Richard D., Waterloo	Williams, M. Neil, Cedar Falls
Thompson, Elvin D., Jefferson	Walker, Charles C., Des Moines (L.M.)	Williams, Thomas L., Cherokee
Thompson, Howard E., Dubuque (L.M.)	Walker, Glenn L., Burlington	Williamson, Billy J., Keokuk
Thompson, James R., Waterloo (L.M.)	Walker, John R., Waterloo	Wilson, Charles R., Manson
Thompson, Kenneth L., Oakland	Walker, Thomas G., Riceville	Wilson, F. Dale, Davenport
Thompson, Virginia D., Des Moines	Walker, Thomas S., Riceville (L.M.)	Wilson, Fredric L., Sioux City
Thomsen, John G., Des Moines	Wall, David, Ames	Wilson, Fredric W., Sioux City
Thornton, F. Eberle, Des Moines	Wall, John M., Boone	Wilson, Robert G., Missouri Valley
Thornton, John W., Lansing	Wallace, Leo F., Burlington	Wilson, William R., Iowa City
Thornton, Thomas F., Waterloo (L.M.)	Wallace, Leonard E., Des Moines	Winninger, Louis T., Waterloo
Thornton, Thomas F., Jr., Waterloo	Wallace, William E., Cedar Rapids	Winter, F. Donald, Burlington
Thorson, John A., Dubuque	Walsh, William E., West Union	Wintermeyer, Laverne A., Des Moines
Throckmorton, J. Fred, Des Moines	Walston, Edwin B., Jackson Heights, New York (L.M.)	Wirtz, Dwight C., Des Moines
Throckmorton, Jeannette Dean, Des Moines (L.M.)	Walston, James H., Sioux City	Wirtz, Emerson K., West Des Moines
Throckmorton, Scott L., Chariton	Walter, Dennis J., Des Moines	Wise, Arthur C., Iowa City
Throckmorton, Tom D., Des Moines	Walton, Seth G., Hampton	Wise, James H., Cherokee
Tice, Claude B., Mason City (L.M.)	Wanamaker, A. Roy, Hamburg	Withers, Bill R., Waukon
Tice, George I., Mason City	Ward, Donovan F., Dubuque	Wolf, Henry H., Elgin
Tice, W. Arnold, Waterloo	Ward, James S., Iowa City	Wolf, William J., West Union
Tidrick, Robert T., Iowa City	Ward, Loraine W., Oelwein	Wolfe, Otis D., Marshalltown
Tiedeman, John P., Sioux City	Warden, Duane D., Council Bluffs	Wolfe, Russell M., Marshalltown
Tierney, Edmund J., Sioux City	Ware, John, Mount Vernon	Wolfe, Wilson C., Ottumwa
Tierney, James M., Carroll	Ware, Stephen C., St. Petersburg, Florida	Wolpert, Paul L., Onawa
Todd, Donald W., Guthrie Center	Ware, Thomas A., Sioux City	Wolters, Donald E., Estherville
Todd, Robert L., Burlington	Warner, Emory D., Iowa City	Wolverton, Benjamin F., Cedar Rapids
Toland, Charles W., Mount Pleasant	Warner, Paul L., Minneapolis, Minnesota	Wood, Richard A., Peterson
Tolliver, Hillard A., Charles City	Warner, Willis A., Iowa City	Woodard, Donald E., Waterloo
Top, Franklin H., Iowa City	Waste, Richard L., Manchester	Woodard, Ralph E., Fort Dodge
Toubes, Abraham A., Des Moines	Waterbury, Charles A., Jr., Waterloo	Woodburn, Chester C., Jr., Des Moines
TouVelle, Alwyn R., Bettendorf	Watson, Charles F., Fairfield	Woodhouse, Keith W., Cedar Rapids
Towle, Robert A., Davenport	Watt, Russell H., Marshalltown	Woodward, Arthur W., Waterloo
Tracy, John S., Sioux City	Watters, George H., Des Moines	Wooters, Richard C., Des Moines
Trafton, Harold F., Council Bluffs	Watts, A. Fred, Creston (A.M.)	Wormhoudt, Herbert L., Ottumwa
Traister, John E., Eddyville (L.M.)	Watts, Campbell F., Cedar Rapids	Worrell, James T., Keosauqua
Traynor, Eugene J., Independence	Watts, Clyde F., Marengo	Worthington, John J., Cherokee
Trefz, Donald L., Nashua	Watzke, Robert C., Iowa City	Wray, Clarence M., Iowa Falls (L.M.)
Trey, Bernard L., Marshalltown	Weaver, David F., Davenport	Wray, Robert M., Cedar Rapids
Treynor, Jack V., Council Bluffs	Weaver, Kenneth H., Union	Wright, David W., Decorah
Trier, Paul J., Des Moines	Webb, Daniel R., Oakdale	Wright, Thomas D., Newton
Tripp, Richard C., Fort Dodge	Webb, James E., Ottumwa	Wright, Thomas G., Marion
Trotzig, Joseph P., Akron	Weber, Frank N., Walnut	Wubben, Arthur C., Rock Rapids
Troxel, John F., Cedar Rapids	Weber, William W., Pomeroy	Wuest, Curtis G., Amana
Troxell, Millard A., Cedar Rapids	Weideman, Don C., Vinton	Wurtzer, Ezra L., Clear Lake (L.M.)
Trueblood, Clare A., Indianola	Weih, Elmer P., Clinton (L.M.)	Wyatt, George M., Iowa City
Trumpe, William D., Cedar Rapids	Weinberg, Harry B., Davenport	Wykoff, Sarah U., Des Moines (A.M.)
Trunnell, Thomas L., Waterloo	Weingart, Julius S., Des Moines (L.M.)	Yancey, C. Corbin, Sioux City
Turner, Howard V., Des Moines	Weland, Regis E., Cedar Rapids	Yein, Chung Sung, Seattle, Washington
Turner, James H., Fairfield	Wellman, Thomas G., Clinton	Yetter, William L., Iowa City
Turner, Rosalie C., Nashua	Wells, Richard D., Waterloo	Yocom, Albert L., Chariton (L.M.)
Turner, Roy M., Armstrong	Wells, Rodney C., Marshalltown	York, Dallas L., Creston
Tyler, Donald E., Fort Dodge	Wellso, Charles G., Cedar Rapids	York, George L., Clinton
Tyrrell, John E., Manchester	Wentworth, Laydon S., Marble Rock	Young, Donald C., Des Moines
Uchiyama, John K., Des Moines	Wentzien, Albert J., Tama	Young, George G., Des Moines
Underriner, Robert E., Holstein	Weresh, John D., Atlantic	Young, Howard O., Marion (L.M.)
*Updegraff, Charles L., Boone (L.M.)	Werner, Harold T., Fort Madison	Young, James J., Clinton
Updegraff, Robert R., Des Moines	Wessels, William R., Iowa City	Young, Richard A., Clarion
Undegraff, Thomas R., Waterloo	West, Alroy G., Council Bluffs	Youngblade, Daniel M., Hartley
Utley, George H., Clarence	West, George H., Jr., Mason City	Yugend, Sidney F., Indianola
Utne, John R., Mason City	West, Norman D., Avoca	Zabloudil, Warren C., Burlington
Utter, James T., Cedar Rapids	Westerlund, Roger L., Ames	Zager, Lewis L., Waterloo
Valestin, Robert F., Des Moines	Westly, G. Travis, Mason City	Zaharis, George M., Des Moines
Van Allen, Maurice W., Iowa City	Westly, J. Stephen, Mason City	Zehr, Earl E., Guttenberg
Van Bommel, Piet F., Ames	Weston, B. Raymond, Mason City	Zelinskas, Leonard P., Dubuque
Van Camp, Thomas H., Breda	Weston, Robert A., Des Moines (L.M.)	Zellweger, Hans, Iowa City
Vander Meulen, Herman C., Pella	Wetrich, David W., Ottumwa	Zibilich, George J., Lone Tree
Vander Stoep, Harry L., LeMars	Wetrich, Max F., Grand Junction	Ziebell, William C., Sioux City
Van Epps, Eugene F., Iowa City	Wettach, Robert S., Mount Pleasant	Ziffen, Sidney E., Iowa City
Vangness, Ingmar U., Sioux City (A.M.)	Weyer, Joseph J., Fort Dodge	Zimmerer, Edmund G., Des Moines (L.M.)
Van Hecke, David C., Davenport	Weyhrauch, Robert A., Cedar Falls	Zimmerman, George R., Iowa City
Van Metre, Paul W., Rockwell City (L.M.)	Wheeler, Edward R., Muscatine	Zoeckler, Samuel J., Des Moines
Van Natta, Carlton W., Des Moines	Wheeler, Richard A., Des Moines	Zoutendam, Ronald L., Sheldon
Van Patten, E. Martin, Fort Dodge	Whinery, Robert D., Iowa City	Zukerman, Cecil M., Davenport
Van Werden, Benjamin D., Keokuk	Whitaker, Ben T., Boone (L.M.)	
Van Wetzlinga, Russell J., Bettendorf	White, Charles A., Iowa City	
Van Zante, Peter, Pella	White, Charles E., Independence	
	White, George H., Des Moines	
	White, Thomas C., Chariton	
	Whitehouse, William N., Ottumwa	

* Deceased
★ Military Service
(L.M.) Life Member
(A.M.) Associate Member

FIFTY YEAR CLUB MEMBERS

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Acher, Albert E.	Fort Dodge	Hickenlooper, Carl B.	Winterset
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Baldwin, Leon A.	Riverton	Hoffman, Paul M.	Tipton
Banton, Oscar H.	Charles City	Hollis, Edward L.	Marengo
Bartlett, George E.	New Sharon	Hopkins, David H.	Des Moines
Blaha, George A.	Whitten	Houser, Cass T.	Cedar Rapids
Boice, Clyde A.	Washington	Housholder, Harold A.	Winthrop
Bowers, Arthur S.	Orient	Howell, Elias B.	Ottumwa
Bowie, Louis L.	Zearing	Hudek, Joseph W.	Garnavillo
Bradley, Carl L.	Newhall	Ingraham, David R.	Sewal
Bullock, William E.	Lake Park	Jackson, James M.	Jefferson
Burbank, Dean S.	Pleasantville	Jaenicke, Kurt	Clinton
Burcham, Thomas A.	Des Moines	James, Lora D.	Fairfield
Campbell, Thomas R.	Sioux Rapids	James, Peter E.	Audubon
Cantwell, John D.	Davenport	Jarvis, Harry D.	Chariton
Carlile, Amos W.	Manning	Johann, Albert E.	Des Moines
Chase, William B., Sr.	Des Moines	Johnson, Amos E.	Florence, Nebraska
Chittum, John H.	Wapello	Jones, Harry J.	Cedar Rapids
Christensen, John R.	Palo Alto, California	Joynt, Albert J.	Waterloo
Clapsaddle, John G.	Burt	Joynt, Michael F.	Marcus
Clasen, Henry W.	Littleton, Colorado	Kahler, Hugo V.	Reinbeck
Closson, Charles L.	Walker	Keech, Roy F.	Cedar Rapids
Cody, William E.	Sioux City	Keeney, George H.	Mallard
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Conmey, Roy M.	Sergeant Bluff	Kern, Lester C.	Waverly
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Crow, George B.	Burlington	Kyle, William S.	Washington
Day, Philip M.	Oskaloosa	Larson, Andrew G.	Dickens
Decker, Jay C.	Sioux City	Loes, Anthony M.	Dubuque
Demaree, Chester	Lacona	Losh, Clifford W.	Des Moines
Ditto, Boyd L.	Burlington	McCall, John H.	Allerton
Dorsey, Thomas J.	Fort Dodge	McClellan, Earl D.	Des Moines
Downing, Leroy M.	Cedar Rapids	McHugh, Charles P.	Sioux City
Egermayer, George W.	Elliot	McMahon, Thomas	Clinton
Ennis, Harry H.	Manchester	McVay, Melvin J.	Lake City
Foley, Walter E.	Davenport	Magee, Emery E.	Waterloo
Gardner, John R.	Lisbon	Maplethorpe, Charles W., Sr.	Toledo
Gearhart, George W.	Springville	Matthey, Walter A.	Bettendorf
Gillett, Francis A.	Oskaloosa	Maxwell, Charles T.	Sioux City
Goenne, William C., Sr.	Davenport	May, George A.	Forest Grove, Oregon
Goodenow, Sidney B.	Colo	Merritt, Arthur M.	Des Moines
Gray, John F.	Melcher	Meyers, Frank W.	Dubuque
Gutch, Roy C.	Chariton	Miller, Enos D.	Wellman
Hamilton, Benjamin F.	Jefferson	Mitchell, Claire H.	Cincinnati
Hansen, Robert R.	Marshalltown	Moore, Jesse C.	Eldon
Harken, Conreid R.	Osceola	Murray, Frederick G.	Cedar Rapids
Harrington, Burton	Cedar Rapids	Neal, Emma J.	Cedar Rapids
Harris, Ray R.	Dubuque	Neuzil, William J.	Cedar Rapids
Hartman, Frank T.	Waterloo		

Noble, Nelle S. Des Moines

O'Brien, Stephen A. Mason City

Oggel, Herman D. Waterloo

Olsen, Martin I. Des Moines

Pahlas, Henry M. Rockford, Illinois

Parker, Robert L. Des Moines

Paul, John D. Anamosa

Pfeiffer, Herry E. Riviera Beach, Florida

Posner, Edward R. Des Moines

Rankin, William Keokuk

Reeder, James E., Sr. Glendale, California

Reimers, Robert S. Fort Madison

Rogers, Claude B. Earlville

Rose, Alvin A. Story City

Rowley, William B. Sioux City

Royal, Malcolm A. Des Moines

Russell, John Santa Barbara, California

Russell, Ralph E. Waterloo

Rust, Emery A. Webb

Saar, Jesse L. Donnellson

Saunders, William E. Tucson, Arizona

Schnug, George E. Dows

Senska, Frank Iowa City

Severson, George I. Slater

Smead, Leslie L. Newton

Smith, John E. Clarence

Snyder, Raleigh R. Des Moines

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Teufel, John C. Davenport

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Thomas, Colin G. Monticello

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Walker, Thomas S. Riceville

Walston, Edwin B. Jackson Heights, New York

Weih, Elmer P. Clinton

Weingart, Julius S. Des Moines

Weston, Robert A. Des Moines

Whitaker, Ben T. Boone

Whitley, Ralph L. Osage

Wilcox, Delano Malcom

Wray, Clarence M. Iowa Falls

Wurtzer, Ezra L. Clear Lake

Yocom, Albert L. Chariton

Young, Howard O. Cedar Rapids

Zimmerer, Edmund G. Des Moines

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McKay, Mrs. R. V.
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Lohr, Mrs. P. E.

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Clarinda**Adam, Mrs. A. B.
Bossingham, Mrs. E. N.
Catlin, Mrs. K. A.
Frenkel, Mrs. H. S.
Jensen, Mrs. K. V.
Johnson, Mrs. N. M.
Kuehn, Mrs. W. G.
Niver, Mrs. E. O.
Shonka, Mrs. T. E.
Sperry, Mrs. F. S.**Shenandoah**Brush, Mrs. C. H.
Eisenach, Mrs. J. R.
Gee, Mrs. K. J.
Gottsch, Mrs. E. J.
Henstorf, Mrs. H. R.
Pettipiece, Mrs. Clayton
Powers, Mrs. G. H.
Strathman, Mrs. L. C.**Cheyenne, Wyoming**

Flynn, Mrs. C. H.

**PALO ALTO COUNTY
Algona**

Plott, Mrs. C. L.

Emmetsburg

Brereton, Mrs. H. L.
Brink, Mrs. J. R.
Coffey, Mrs. J. L.
Moore, Mrs. C. C.
Powers, Mrs. H. R.
Wigdahl, Mrs. L. C.

Mallard

Keeney, Mrs. G. H.

**POLK COUNTY
Ankeny**

Gray, Mrs. L. R.
Hach, Mrs. F. T.
Nielsen, Mrs. A. T.

Des Moines

Abbott, Mrs. W. D.
Alberts, Mrs. M. E.
Allender, Mrs. R. B.
Amick, Mrs. P. P.
Anderson, Mrs. H. N.
Anderson, Mrs. R. W.
Augspurger, Mrs. B. B.
Baker, Mrs. W. E.
Bakody, Mrs. J. T.
Bates, Mrs. M. T.
Birge, Mrs. R. F.
Blair, Mrs. D. W.
Blount, Mrs. H. C., Jr.
Bone, Mrs. H. C.
Brown, Mrs. A. W.
Burcham, Mrs. T. A.
Burgeson, Mrs. F. M.
Burke, Mrs. E. T.
Burr, Mrs. C. L.
Byers, Mrs. J. R.
Carter, Mrs. R. E.
Cash, Mrs. P. T.
Caudill, Mrs. G. G.
Chase, Mrs. W. B., Jr.
Chase, Mrs. W. B., Sr.
Clemens, Mrs. A. L.
Corn, Mrs. H. H.
Coughlan, Mrs. D. W.
Cromwell, Mrs. J. O.
Crowley, Mrs. D. F., Jr.
Dahl, Mrs. H. W.
Decker, Mrs. H. G.
Dickens, Mrs. J. H.
Diment, Mrs. M. M.
Dorner, Mrs. R. A.
Downing, Mrs. A. H.
Downing, Mrs. J. A.
Drew, Mrs. E. J.
Dubansky, Mrs. M. H.
Dyson, Mrs. R. E.
Eklund, Mrs. H. E.
Elliott, Mrs. O. A.
Ellis, Mrs. H. G.
Ely, Mrs. L. O.
Fatland, Mrs. J. L.
Foss, Mrs. R. H.
Fraser, Mrs. J. B.
From, Mrs. Paul
Gangeness, Mrs. L. G.
Geoghegan, Mrs. B. P.
Ghrist, Mrs. T. D.
Gibson, Mrs. D. N.
Glomset, Mrs. D. A.
Goldberg, Mrs. Louis
Gordon, Mrs. A. M.
Green, Mrs. J. W., Jr.
Greenhill, Mrs. Solomon
Gurau, Mrs. H. H.
Gustafson, Mrs. J. E.
Gutenkauf, Mrs. C. H.
Haines, Mrs. D. J.
Hammer, Mrs. R. W.
Harnagel, Mrs. E. J.
Hayek, Mrs. J. M.
Hayne, Mrs. R. A.
Heeren, Mrs. R. H.
Hepplewhite, Mrs. J. W.
Hertko, Mrs. E. J.
Hess, Mrs. John, Jr.
Hill, Mrs. L. F.
Hines, Mrs. R. E.
Hirsch, Mrs. M. R.
Hoffmann, Mrs. R. W.
Holzworth, Mrs. P. R.
Hornaday, Mrs. W. R., Jr.
Hornaday, Mrs. W. R., Sr.
Huehes, Mrs. P. K.
Hull, Mrs. C. N.
Irving, Mrs. N. W., Jr.
James, Mrs. D. W.
Jenkins, Mrs. H. F.
Johnson, Mrs. C. O.

Johnson, Mrs. R. M.
Johnston, Mrs. C. H.
Kast, Mrs. D. H.
Katzmann, Mrs. F. S.
Kelley, Mrs. J. H.
Kelly, Mrs. D. H., Jr.
Kelly, Mrs. D. H., Sr.
Kelsey, Mrs. J. E.
Kern, Mrs. G. A.
Kilgore, Mrs. B. F.
Klockslem, Mrs. H. L.
Knox, Mrs. R. M.
Koons, Mrs. C. H.
La Mar, Mrs. J. W.
Lambrecht, Mrs. P. B.
Larson, Mrs. R. C.
Latchem, Mrs. C. W.
Lawler, Mrs. M. P., Jr.
Losh, Mrs. C. W., Jr.
Lovejoy, Mrs. E. P.
Lowry, Mrs. E. C.
Lulu, Mrs. D. J.
Maher, Mrs. L. L.
Mark, Mrs. M. S.
Marquis, Mrs. G. S.
Matheson, Mrs. J. H.
Meredith, Mrs. L. K.
Merillat, Mrs. A. C.
Merkel, Mrs. A. E.
Merkel, Mrs. B. M.
Meservey, Mrs. M. A.
Minassian, Mrs. T. A.
Mooney, Mrs. J. C.
Moore, Mrs. R. M.
Morrison, Mrs. J. R.
Morrisey, Mrs. W. J.
Mountain, Mrs. G. E.
McBride, Mrs. D. F.
McClellan, Mrs. E. D.
McCoy, Mrs. H. J.
McGarvey, Mrs. N. J.
McNamee, Mrs. J. H.
Newland, Mrs. D. O.
Nielsen, Mrs. G. E.
Nitzke, Mrs. E. A.
Nordin, Mrs. C. A.
Noun, Mrs. L. J.
Noun, Mrs. M. H.
Olsen, Mrs. M. I.
Olson, Mrs. S. O.
Ortiz, Mrs. Rafael
Parson, Mrs. V. G.
Payne, Mrs. H. C.
Pearlman, Mrs. L. R.
Peisen, Mrs. C. J.
Peterson, Mrs. L. G.
Phillips, Mrs. A. B.
Posner, Mrs. E. R., Jr.
Priestley, Mrs. J. B.
Purnell, Mrs. G. B.
Redfield, Mrs. E. L.
Reed, Mrs. R. J.
Riegelman, Mrs. R. H.
Rindskopf, Mrs. Wallace
Rotkow, Mrs. M. J.
Ryan, Mrs. J. W., Jr.
*Schill, Mrs. A. E.
Schissel, Mrs. D. J.
Schlaser, Mrs. V. L.
Schropp, Mrs. R. C.
Schupp, Mrs. J. G., Jr.
Shepherd, Mrs. L. K.
Shiffler, Mrs. H. K.
Shinkle, Mrs. W. C.
Silk, Mrs. Marvin
Skultety, Mrs. J. A.
Smith, Mrs. A. N.
Smith, Mrs. H. J.
Smith, Mrs. L. D.
Sohn, Mrs. H. A.
Sones, Mrs. C. A.
Speers, Mrs. J. F.
Springer, Mrs. F. A.
Stephens, Mrs. R. R.
Steves, Mrs. R. J.
Stickler, Mrs. R. B.
Summers, Mrs. T. B.
Teigland, Mrs. J. D.
Thomsen, Mrs. J. C.
Thornton, Mrs. F. E.
Throckmorton, Mrs. J. F.
Throckmorton, Mrs. T. B.
Throckmorton, Mrs. T. D.
Toubes, Mrs. A. A.
Turner, Mrs. H. V.
Updegraff, Mrs. R. R.
Vorisek, Mrs. E. A.
Walter, Mrs. D. J.
Watters, Mrs. G. H.
Weingart, Mrs. J. S.
Wheeler, Mrs. R. A.
White, Mrs. G. H.
Wichern, Mrs. H. E.
Wintermeyer, Mrs. L. A.

Wirtz, Mrs. D. C.
Woodburn, Mrs. C. C., Jr.
Young, Mrs. D. C.
Young, Mrs. G. G.
Zaharis, Mrs. G. M.
Zoeckler, Mrs. S. J.

Huxley

Nelson, Mrs. A. L.

Indianola

Cornish, Mrs. L. R.
Trueblood, Mrs. C. A.
Yugend, Mrs. S. F.

Norwalk

Cunningham, Mrs. M. B.

West Des Moines

Barnett, Mrs. J. A.
Coleman, Mrs. F. C.
Overton, Mrs. R. W.
Peterson, Mrs. C. R.
Sternagel, Mrs. Fred
Van Natta, Mrs. C. W.

**POTTAWATTAMIE COUNTY
Carson**

Angel, Mrs. Jose V. G.

Council Bluffs

Bean, Mrs. E. O.
Beaumont, Mrs. F. H.
Bierman, Mrs. M. H.
Cogley, Mrs. J. P.
Cohen, Mrs. S. A.
Collignon, Mrs. U. J.
Conlon, Mrs. J. B.
Edwards, Mrs. C. V.
Edwards, Mrs. C. V., Jr.
Floersch, Mrs. E. B.
Giles, Mrs. W. C.
Gonlubol, Mrs. Fethi
Griffith, Mrs. W. O.
Guggenheim, Mrs. Paul
Hanssmann, Mrs. I. J.
Hennessy, Mrs. J. D.
Hirst, Mrs. D. V.
Hombach, Mrs. W. P.
Hopp, Mrs. R. L.
Howard, Mrs. L. G.
Kenney, Mrs. B. E.
Kinney, Mrs. M. W.
Klok, Mrs. G. J.
Krettek, Mrs. J. E.
Kruml, Mrs. J. G.
Landry, Mrs. G. R.
Lowry, Mrs. C. F.
Mahoney, Mrs. J. D.
Margules, Mrs. M. P.
Marsh, Mrs. F. E., Jr.
Martin, Mrs. L. R.
Mathiasen, Mrs. E. B.
Mathiasen, Mrs. H. W.
Mathiasen, Mrs. J. W.
Moe, Mrs. R. H.
Moriarty, Mrs. D. L.
Ozaydin, Mrs. I. M.
Pedersen, Mrs. A. M.
Pedersen, Mrs. P. D.
Pester, Mrs. G. H.
Rassekh, Mrs. Hormoz
Richardson, Mrs. F. H.
Selo, Mrs. R. A.
Smith, Mrs. L. D.
Sternhill, Mrs. Isaac
Stroy, Mrs. D. T.
Trafton, Mrs. H. F.
Warden, Mrs. D. D.
Weir, Mrs. E. C.
West, Mrs. A. G.

Minden

Olsen, Mrs. M. E.

Oakland

Hausheer, Mrs. M. R.

**SCOTT COUNTY
Bettendorf**

Altman, Mrs. S. J.
Byrum, Mrs. R. J.
Gibson, Mrs. P. E.
Hendricks, Mrs. A. B.

Hollander, Mrs. W. M.
Kimberly, Mrs. L. W.
Kulp, Mrs. R. R.
Motto, Mrs. E. A.
Noble, Mrs. H. D.
Ott, Mrs. M. D.
Smith, Mrs. R. T.
Sorenson, Mrs. A. C.
TouVelle, Mrs. A. R.
Towle, Mrs. R. A.
Van Wetzlinga, Mrs. R. J.
Weis, Mrs. H. A.

Davenport

Anderson, Mrs. E. W.
Anrode, Mrs. R. A.
Berger, Mrs. R. A.
Bessmer, Mrs. W. G.
Bishop, Mrs. J. F.
Boone, Mrs. A. W.
Bovenmyer, Mrs. D. A.
Braunlich, Mrs. George
Brown, Mrs. M. J.
Collins, Mrs. J. F.
Cronkleton, Mrs. T. E.
Crowley, Mrs. P. J.
Cunnick, Mrs. P. C.
Cunningham, Mrs. G. D.
Cusick, Mrs. G. W.
Daut, Mrs. R. V.
Decker, Mrs. C. E.
Donahue, Mrs. J. C.
Edgerton, Mrs. W. D.
Erikson, Mrs. R. E.
Fesenmeyer, Mrs. C. R.
Flynn, Mrs. G. A.
Foley, Mrs. R. J.
Goenne, Mrs. R. E.
Goenne, Mrs. W. C.
Goldman, Mrs. B. R.
Gray, Mrs. G. W.
Hands, Mrs. S. G.
Hurevitz, Mrs. H. M.
Kehoe, Mrs. J. L.
Kohrs, Mrs. E. F.
Kuhl, Mrs. A. B., Jr.
Lamb, Mrs. F. H.
Larson, Mrs. Erling, Jr.
Lenzmeier, Mrs. A. J.
Losasso, Mrs. D. A.
McConnell, Mrs. R. W.
McFadden, Mrs. F. R.
McKay, Mrs. K. H.
McMeans, Mrs. T. W.
Manning, Mrs. E. L.
Matthey, Mrs. C. H.
Neufeld, Mrs. Robert
Perkins, Mrs. R. M.
Phetepplace, Mrs. W. S.
Preacher, Mrs. C. D.
Senty, Mrs. E. G.
Shafer, Mrs. A. W.
Shafer, Mrs. L. E.
Smazal, Mrs. S. F.
Stimac, Mrs. E. M.
Sunderbruch, Mrs. J. H.
Syverud, Mrs. J. M.
Weaver, Mrs. D. F.
Weinberg, Mrs. H. B.
White, Mrs. P. A.
Wilson, Mrs. F. D.
Zukerman, Mrs. C. M.

Eldridge

Lagoni, Mrs. R. P.

Pleasant Valley

Shorey, Mrs. J. R.

SHELBY COUNTY Avoca

Huntley, Mrs. C. C.
West, Mrs. N. D.

Elk Horn

Larson, Mrs. G. E.

Harlan

Bisgard, Mrs. C. V.
Donlin, Mrs. R. E.
Larsen, Mrs. L. V.
Markham, Mrs. W. S.
Ryan, Mrs. A. J.
Spearing, Mrs. J. H.

Shelby

Crane, Mrs. D. D.

SIoux COUNTY Alton

Murphy, Mrs. C. B.

Hawarden

Langley, Mrs. R. L.
Larson, Mrs. M. O.

Hull

Swanson, Mrs. K. R.

Orange City

Bushmer, Mrs. Alexander
Doornink, Mrs. William
Grossman, Mrs. E. B.
Hassebroek, Mrs. R. J.

Rock Valley

Hegg, Mrs. L. R.

Sioux Center

Kiernan, Mrs. T. E.
McGilvra, Mrs. A. L.
Oelrich, Mrs. C. D.

WAPELLO COUNTY Otumwa

Anthony, Mrs. W. E.
Austin, Mrs. A. T.
Blome, Mrs. A. L.
Blome, Mrs. G. C.
Bovenmyer, Mrs. D. O.
Brody, Mrs. Sidney
Coppoc, Mrs. L. E.
Dalager, Mrs. R. D.
De Kraay, Mrs. W. H.
Ebinger, Mrs. E. W.
Ekart, Mrs. P. I.
Emanuel, Mrs. D. G.
Emerson, Mrs. D. D.
Fox, Mrs. Stephan
Gugle, Mrs. L. J.
Hastings, Mrs. R. A.
Holman, Mrs. D. O.
Howell, Mrs. E. B.
Ireland, Mrs. W. W.
Kingsbury, Mrs. K. R.
Lister, Mrs. K. E.
McIntosh, Mrs. P. D.
Maixner, Mrs. R. R.
Maixner, Mrs. W. D.
Melampy, Mrs. C. N.
Meyers, Mrs. R. P.
Moore, Mrs. Martin
Morgan, Mrs. F. W.
Nelson, Mrs. F. L.
Prewitt, Mrs. L. H.
Rater, Mrs. D. L.
Ritter, Mrs. J. A.
Roberts, Mrs. J. B.
Scott, Mrs. P. W.
Spilman, Mrs. H. A.
Stewart, Mrs. J. H.
Vaughn, Mrs. V. J.
Vineyard, Mrs. T. L.
Webb, Mrs. J. B.
Wetrich, Mrs. D. W.
Whitehouse, Mrs. W. K.
Whitehouse, Mrs. W. N.
Wolfe, Mrs. W. C.
Wormhoudt, Mrs. H. L.

WEBSTER COUNTY Fort Dodge

Acher, Mrs. A. E.
Baker, Mrs. C. J.
Bock, Mrs. D. G.
Cooper, Mrs. D. C.
Coughlan, Mrs. C. H.
Dagle, Mrs. C. L.
Dawson, Mrs. E. B.
Drown, Mrs. R. E.
Dunn, Mrs. R. C.
Echternacht, Mrs. A. P.
Egbert, Mrs. D. S.
Giles, Mrs. F. E.
Glesne, Mrs. O. N.
Gower, Mrs. W. E.
Hutchinson, Mrs. R. M.
Kelly, Mrs. J. F.
Kersten, Mrs. H. H.
Kersten, Mrs. J. R.
Kluever, Mrs. H. C.
Kraushaar, Mrs. M. E.
Landhuis, Mrs. L. R.

LaPorte, Mrs. P. A.
Larsen, Mrs. F. S.
Lee, Mrs. R. W.
Loeffelholz, Mrs. P. L.
McCarroll, Mrs. J. G.
McTaggart, Mrs. W. B.
Maltry, Mrs. Emile
Michelfelder, Mrs. T. J.
Moore, Mrs. E. E.
O'Brien, Mrs. L. J.
Otto, Mrs. P. C.
Safraneck, Mrs. E. J.
Sanders, Mrs. M. G.
Schacht, Mrs. N. A.
Sebek, Mrs. R. O.
Stitt, Mrs. P. L.
Sunner, Mrs. G. C.
Swanson, Mrs. E. M.
Thatcher, Mrs. W. C.
Tripp, Mrs. R. C.
Tyler, Mrs. D. E.
Van Patten, Mrs. E. M.
Woodard, Mrs. R. E.

Lehigh

Kiesling, Mrs. H. F.

WINNESHIEK COUNTY Calmar

Miller, Mrs. Garfield

Decorah

Bullard, Mrs. J. A.
Dolan, Mrs. T. R.
Hagen, Mrs. E. F.
Larson, Mrs. L. E.
Wright, Mrs. D. W.

Ossian

Goggin, Mrs. J. G.

WOODBURY COUNTY

Sioux City

Arnold, Mrs. K. E.
Ayers, Mrs. L. J.
Berkstresser, Mrs. C. F.
Bettler, Mrs. P. L.
Beye, Mrs. C. L.
Blackstone, Mrs. M. A.
Blenderman, Mrs. A. D.
Blume, Mrs. D. B.
Boden, Mrs. W. C.
Boe, Mrs. Henry
Boggs, Mrs. L. H.
Bowers, Mrs. C. V.
Boysen, Mrs. J. F.
Brown, Mrs. C. A.
Burroughs, Mrs. H. H.
Caes, Mrs. H. J.
Callaghan, Mrs. A. J., Jr.
Collins, Mrs. R. E.
Coriden, Mrs. T. L.
Davey, Mrs. W. P.
Decker, Mrs. J. C.
Dimsdale, Mrs. L. J.
Donohue, Mrs. E. S.
Down, Mrs. H. I.
Dvorak, Mrs. J. E.
Englemann, Mrs. A. T.
Erickson, Mrs. E. D.
Frank, Mrs. L. J.
Gittins, Mrs. T. R.
Graham, Mrs. J. W.
Grossman, Mrs. M. D.
Hagen, Mrs. E. J.
Helmann, Mrs. V. R.
Hendrickson, Mrs. A. H.
Hicks, Mrs. W. K.
Honke, Mrs. E. M.
Horsley, Mrs. A. W.
Horst, Mrs. A. W.
Howard, Mrs. D. E.
Jacobs, Mrs. C. A.
Johnson, Mrs. A. Q.
Jones, Mrs. H. W.
Kaplan, Mrs. D. D.
Keane, Mrs. K. M.
Kelberg, Mrs. M. R.
Kelly, Mrs. A. H.
Kelly, Mrs. J. F.
Kivlighn, Mrs. D. D.
Knott, Mrs. P. D.
Krigsten, Mrs. J. M.
Larimer, Mrs. R. C., Jr.
Larimer, Mrs. R. N.
Leiter, Mrs. H. C.
Lohr, Mrs. F. J.
McBride, Mrs. R. H.

- McCarthy, Mrs. F. D.
McQuiston, Mrs. H. M.
McFarlane, Mrs. J. A.
Marriott, Mrs. C. M.
Maxwell, Mrs. C. T.
Monnig, Mrs. P. J.
Morgan, Mrs. R. L.
Mugan, Mrs. R. C.
Mumford, Mrs. E. M.
Osincup, Mrs. P. W.
Parrish, Mrs. H. H.
Pierson, Mrs. L. E.
Pugh, Mrs. P. H.
Rausch, Mrs. G. R.
Reeder, Mrs. J. E., Jr.
Robison, Mrs. H. V.
Rohwer, Mrs. R. T.
Rowley, Mrs. W. G.
Rowney, Mrs. G. W.
Rudersdorf, Mrs. H. E.
Schwartz, Mrs. J. W.
Shulkin, Mrs. S. H.
Sibley, Mrs. E. H.
Skorey, Mrs. G. R.
Spellman, Mrs. G. G.
Stark, Mrs. F. M.
Starry, Mrs. A. C.
Stauch, Mrs. O. A.
Thoman, Mrs. W. S.
Tiedeman, Mrs. J. P.
Tierney, Mrs. E. J.
Tracy, Mrs. J. S.
Wagner, Mrs. D. J.
Wainwright, Mrs. M. T.
Walston, Mrs. J. H.
Ware, Mrs. T. A.
Wiedemier, Mrs. J. L.
Wilson, Mrs. F. L.
Wilson, Mrs. F. W., Jr.
Ziebell, Mrs. W. C.

WORTH COUNTY

Manly

McAllister, Mrs. W. G.
Westly, Mrs. S. S.

Northwood

Allison, Mrs. M. P.
Bergen, Mrs. C. T.
Olson, Mrs. R. L.
Osten, Mrs. B. H.

WRIGHT COUNTY

Belmond

Hruska, Mrs. G. J.
Leinbach, Mrs. S. P.
Pitcher, Mrs. A. L.
Sweem, Mrs. D. L.

Clarion

Eaton, Mrs. R. C.
Gorrell, Mrs. R. L.
Hawkins, Mrs. C. P.
McCool, Mrs. R. F.
Smith, Mrs. R. W.
Young, Mrs. R. A.

Dows

Aageson, Mrs. C. A.
Schnug, Mrs. G. E.

Eagle Grove

Harding, Mrs. D. A.
Hogenson, Mrs. G. B.
Schaeferle, Mrs. M. J.
Smith, Mrs. E. M.

Goldfield

Basinger, Mrs. B. L.

MEMBERS-AT-LARGE

Anderson, Mrs. K. N., Center Point (Linn)
Armitage, Mrs. G. I., Osceola (Clarke)
Ashler, Mrs. F. M., Hamburg (Fremont)
Ashline, Mrs. G. H., Keokuk (South Lee)
Bendixen, Mrs. F. C., LeMars (Plymouth)
Billingsley, Mrs. J. W., Newton (Jasper)
Bliss, Mrs. W. R., Ames (Story)
Bourne, Mrs. M. G., Algona (Kossuth)
Bristow, Mrs. G. B., Osceola (Clarke)
Broers, Mrs. M. U., Schleswig (Crawford)
Broman, Mrs. J. A., Maquoketa (Jackson)
Brown, Mrs. G. F., Anamosa (Jones)
Brown, Mrs. I. E., Hartley (O'Brien)
Brunk, Mrs. A. W., Prescott (Adams)
Brunkhorst, Mrs. J. B., Waverly (Bremer)
Camp, Mrs. J. R., Britt (Hancock)
Carney, Mrs. R. M., Brooklyn (Poweshiek)
Chesnutt, Mrs. J. C., Cherokee (Cherokee)
Day, Mrs. P. M., Oskaloosa (Mahaska)
Deal, Mrs. C. F., Elkader (Clayton)
Doran, Mrs. J. R., Ames (Story)
Downing, Mrs. W. L., LeMars (Plymouth)
Eller, Mrs. L. W., Kanawha (Hancock)
Elmer, Mrs. N. J., Sumner (Bremer)
Evans, Mrs. J. E., Winterset (Madison)
Fee, Mrs. C. H., Denison (Crawford)
Feldick, Mrs. H. G., Buffalo Center (Winnebago)
Fellows, Mrs. J. G., Ames (Story)
Ferguson, Mrs. J. W., Newton (Jasper)
Fishman, Mrs. H. J., Cherokee (Cherokee)
Garber, Mrs. K. A., Corydon (Wayne)
Getty, Mrs. E. B., Primghar (O'Brien)
Goad, Mrs. R. R., Muscatine (Muscatine)
Grundberg, Mrs. Gerhard, Maquoketa (Jackson)
Hansen, Mrs. R. R., Storm Lake (Buena Vista)
Hardwig, Mrs. O. C., Waverly (Bremer)
Hayden, Mrs. M. D., Cherokee (Cherokee)
Hege, Mrs. J. H., Mount Vernon (Linn)
Heise, Mrs. R. H., Story City (Story)
Hennessey, Mrs. J. M., Manilla (Crawford)
Hommel, Mrs. P. R. V., Elkader (Clayton)
Houlihan, Mrs. F. W., Ackley (Hardin)
Huber, Mrs. R. A., Charter Oak (Crawford)
Hutcheson, Mrs. T. S., Ida Grove (Ida)
Johnson, Mrs. R. M., Denison (Crawford)
Jongewaard, Mrs. R. E., Wesley (Kossuth)

Koelling, Mrs. L. H., Newton (Jasper)
Kroack, Mrs. K. J., Buffalo Center (Winnebago)
Lindell, Mrs. S. E., LeMars (Plymouth)
MacLeod, Mrs. H. G., Greene (Butler)
Mailliard, Mrs. R. E., Storm Lake (Buena Vista)
Maplethorpe, Mrs. C. W., Sr., Toledo (Tama)
Maris, Mrs. Cornelius, Sanborn (O'Brien)
Maughan, Mrs. J. F., Baxter (Jasper)
McFarland, Mrs. G. E., Jr., Ames (Story)
McVay, Mrs. M. J., Lake City (Calhoun)
Megorden, Mrs. W. H., Mount Pleasant (Henry)
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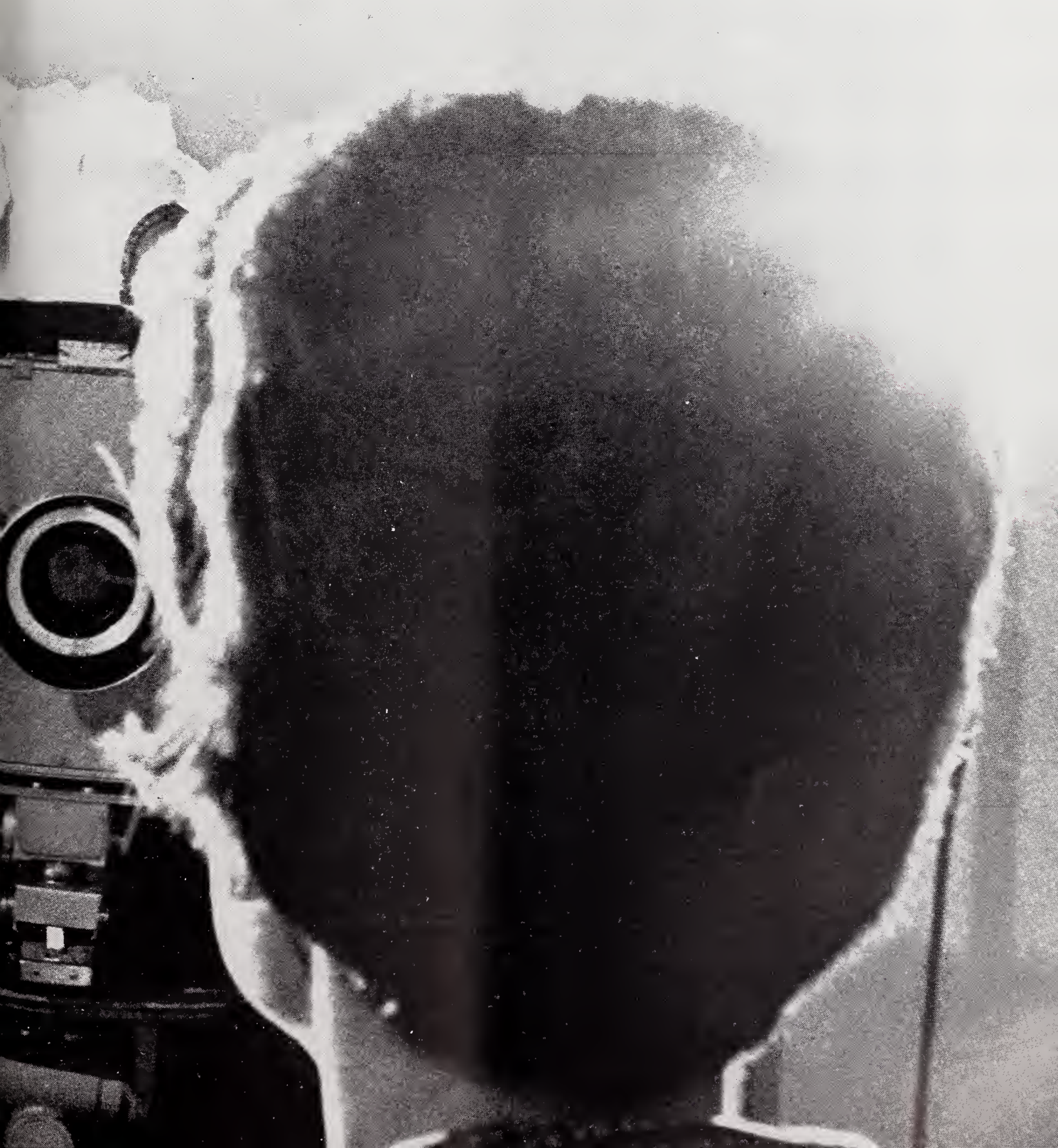
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The Impact of Knowledge

CHARLES H. BRADFORD, M.D.

Boston, Massachusetts

EMERSON, in one of his finest essays, "The American Scholar," reminds us that we are born to exercise all our talents, rather than the limited and specialized ones we have cultivated for a single trade or purpose. There are few who need such a reminder more than we do, as doctors, imprisoned as we are within our own profession and allowing all else to escape unnoticed. Around us, the world rushes forward, passing from one revolutionary change to another. Invention transforms industry and disrupts labor; these two, in turn, disrupt the old order of society, and society itself plunges into a cultural vertigo of dismantled truths, and faith is replaced by ill-defined philosophies. But with all these for a background, medicine pursues its own course, oblivious to the avalanche of events on which it rides. A broader glance will show that medicine is merely a part of a vast, historical movement that is transforming the world; and from this universal upheaval, it gains its own impetus and progress.

From these past hundred years of cataclysmic events, we can isolate many factors responsible for change; but behind them we find one primary cause, basic to all the rest. This is the sudden, titanic outpouring of knowledge that has taken place—as if all the sciences had erupted simultaneously, disgorging upon mankind limitless torrents of facts and information, limitless categories of theoretical understanding, limitless means and facilities for further research. The world has been struck, in other words, by the overwhelming force of knowledge, on such a scale that every institution, every nation, every race has felt its shuddering impact. Our attention should, for the moment, be fixed on the general effects, characterizing this fundamental factor: this IMPACT OF KNOWLEDGE.

KNOWLEDGE IS A TOOL, BUT CAN BE DISRUPTIVE

Let us observe at the outset that knowledge is not an abstraction, like an opinion or a thought;

Dr. Bradford is the author of a paper entitled "Medical Aims and Ideals," which appeared in the May 23, 1963, NEW ENGLAND JOURNAL OF MEDICINE, and from which we have quoted in an editorial in this issue.

nor is it an emotion like wishing or hoping. Knowledge is factual, and once man possesses it, he puts it to work. For instance, mankind acquired knowledge concerning telephonic transmission from Alexander Bell, and from Marconi concerning radio waves, and from the Wright brothers concerning flight. From others it learned about steam engines, gasoline engines, jets and rockets—and vastly more. Out of all this was devised the extraordinary acceleration of communication and travel that now girdles the earth. Here is the seed of a revolution in international affairs beyond any previous circumstance. Suddenly, all nations of the world are neighbors. No rules of statecraft can control this new factor which has converted the world overnight into a single community. Despite all its disruptive antagonisms and hostile instincts, the human race has become physically unified. Here is the *fact* that stares at us, while premiers and dictators and presidents scurry from capital to capital and conference to conference. This fact is the real arbiter, the real ruler of mankind; and from now on, it will dominate us, however we resist.

Knowledge has not confined itself to communications. In commerce, industry, trade and agriculture it has given us a host of new machines, chemicals, physical powers, metals, fabrics, techniques and devices. As a result, knowledge has reshaped the world's economy, revising the exports and imports of nations, altering the values of commodities, and creating enormous surpluses and huge demands that reach across the seven seas to each of the six continents.

Socially, knowledge has come to us on such a wide scale and with so many innovations that it has affected our whole manner of living, our whole outlook on life. We can see this illustrated in instance after instance. With the movie industry, knowledge destroyed the theater. With television, it destroyed the movies. (Has it also destroyed thought?) With railroads it destroyed distance. With automobiles, it superseded railroads and ended sectionalism. What will it do with airplanes, with satellites, with the space ships of the future? And what does all this do to the home? Whether helpful or hurtful, these changes have overwhelmed and uprooted society as it existed before. Somewhere in the debris, we must search for whatever standards may be left from the past; but it will not be the past that will govern. New

knowledge will require new standards. New enlightenment has brought with it a new world.

Beyond the world of society, knowledge has entered the intellectual world, much as a teacher would enter a classroom of pupils. But *this* teacher is not here to tell what mankind has long known. It brings an original viewpoint. It undermines the superstitions, the ignorance, even the faiths of the past. It introduces doubt where there was certainty; and certainty where there was doubt. Mankind finds that the most basic concepts are subject to revision. In the process of redefining faith, large sections of humanity discover they possess no faith at all. Without spiritual guidance, they may revert to animal behaviorism, as in the recent orgies of national depravity represented by Nazism and Fascism. Deluded people today may appear to be abstractions without meaning, like the immature art of surrealism, the pointless philosophy of "existentialism," or the jungle music of jazz. Many will content themselves with mere pleasure, retreating from reality in luxurious living, and making glamor or gaming their idle objectives. From such tendencies have sprung up the lavish hotel chains of Vacation Land; and thus have come into being such exorbitant citadels of delinquency as Las Vegas and Reno, together with their counterparts in other lands. Fabulous wealth is spent on fabulous dissipation. More hopefully, many persons today turn to culture and higher learning; many to the true arts, to serious study, to refined leisure, and to what may rightly be called "good living." Civic improvement, social welfare, economic progress, and neighborly charity have never been more persistently or more sincerely pursued than today.

Each of these trends or movements, good or bad, reflects in some degree the *impact of knowledge*. This we can sense all the more forcibly as we come to realize that the various mechanical and technologic elements on which modern civilization depends are themselves nothing but materialized knowledge. In each case, a thought, tested and proved by science, has become a thing, whether it be the Golden Gate Bridge of Grand Coulee Dam, whether a cyclotron or a transistor, whether a skyscraper or a television network. Through knowledge, speculations have grown into satellites; ideas have become industries; dreams have brought realities.

The wonder of this immense movement of the human mind is measured not only by its extent, but by its speed. This can best be illustrated by pointing out a fact that may startle us as we first grasp it. Without exaggeration, we can say that technically, mechanically, scientifically, and intellectually, the times in which Abraham Lincoln spent his boyhood and youth—in fact, the major part of his life—were closer to the times of Julius Caesar than to our own day. A glance will show us that most of the great developments in modern

knowledge have occurred within not much over a century—and the great bulk of it, within the last sixty years. Three sciences, for instance, gained their founding charters in the '50s and '60s of the 19th Century. Darwin's theory of evolution was published in 1858; Pasteur's discoveries of germs culminated in 1862; and chemists learned the order of the elements from Mendeleyev's Periodic Law in 1869. Not until J. J. Thomson's contributions of 1897 was the electronic concept of atoms made known; and physics did not enter the electronic field until Rutherford's studies in the first decade of the twentieth century. Mathematical or theoretical physics gained the theory of relativity from Einstein's first paper in 1905. It should be stressed that these discoveries and pronouncements were not just incidental happenings. Each of them represented the birth of a new science; each represented the turning of a key that opened the vaults of knowledge; each represented the revelation of secrets for which humanity had been groping from the beginnings of time. Before these revelations, men could neither think nor live nor work, in a modern sense; but since then, the floodgates of invention have been thrown open, almost beyond belief.

MEDICINE IS JUST ONE OF THE BENEFICIARIES

As doctors, our interest very naturally centers upon the effect that this Impact of Knowledge has had on our own profession. The broader view we have just taken has helped us appreciate the character and extent of the inundation of knowledge as a whole. From this, we can easily sense that medicine is merely one of its beneficiaries; for knowledge possesses a universal quality which cannot be fragmented. Just as the outpourings of the Mississippi or the Rhone or the Rhine all serve to deepen the whole ocean, so there is an ocean of knowledge into which all rivers of learning flow, and in which every science has its common source of fact and information. Medicine has drawn its growth from all sciences combined; and in return, it has contributed its own immense advances and discoveries. The result has produced something more than a revolution in medical practice; it has brought a wholly new practice never previously conceived. Pathology, for instance, did not exist until Virchow's basic paper on cellular structure, which first appeared in 1858—a twin to Darwin's evolution, a theory which, incidentally, Virchow always regarded as nonsense. Bacteriology did not exist before Pasteur, and its discovery, as we have mentioned, dates from his experiments on Mt. Blanc in 1862. Physiology did not exist at all a century ago, though we might find it difficult to assign a precise date for its birth. It is perhaps easier to list the physiologic concepts that were unknown or unimagined in that earlier era. They would include: endocrines, enzymes, electrolytes, blood grouping, blood pressure, allergies,

acidity, alkalinity, and metabolism. There was no accurate appraisal of biochemical processes nor of dietary elements, nor of vitamins, nor of peristalsis. In fact, there was no physiology! The pharmacology of that period existed in such a primitive state as to justify the famous comment by Holmes that if all the drugs in the pharmacopoeia were thrown in the sea, it would be so much better for mankind and worse for the fish. From all of this, may we not say that Medicine itself existed a hundred years ago in a form so rudimentary and elementary that we can scarcely relate it to our modern science.

Where there was no body of medical knowledge, there could be no limbs—that is to say, no specialties. Modern surgery waited for Lister, and might almost be said to have originated with Fitts' paper on appendicitis in 1883. Modern medicine began to develop about the same time, and with gradual accessions of knowledge its growth gained impetus each decade. A certain dread still lingers around the names of such diseases as diphtheria, typhoid, tuberculosis, pernicious anemia, diabetes, and the devastating infections that almost invariably meant death in years that have only just passed. The reason for such a tragic state of affairs, persisting in some part up to very recent years, was simply that medical knowledge had not yet been born, or had not reached maturity. As the Bible says: "Fools die for lack of knowledge."

At this point, it might be worth while to pause over a fact that contemporary historians fail to emphasize. In the long annals of mankind, there have been wars and crusades, conquests and migrations, and reformations and revolutions; but when all of these are added together and reviewed, we shall find none that have brought as much positive human benefit as have the transformations in medicine that have occurred in this last hundred years. Other struggles of history have been waged for political or economic power, and their results have brought triumph or subjugation, pride or misery to mankind. But in the conquest of thought that created modern medicine, we see a new type of warfare. Humanity, for the first time, has risen against the oppression not of men but of nature. Disability, deformity, disease, and death, the four horsemen of the medical world, have been defeated or turned back on wide fronts. This achievement stands in striking contrast to the familiarly pessimistic maxim of Hippocrates: "Life is short, and the art is long." These last four generations have brought more gains than all preceding generations from Hippocrates down!

WE MUST CHANGE OUR WAYS

We can easily recognize that the impact of this growth of knowledge will necessarily cause far-reaching changes in medical activities. Though there will not be time to analyze these changes in

detail, some of their major aspects are well worth discussing. The most fundamental of all is a change of emphasis which arises from the therapeutic powers we have gained. Physical findings, symptomatology and diagnosis formerly seemed paramount, since earlier medical knowledge could go little further than cataloging and classifying diseases. Today, diagnosis is merely a preliminary step through which we advance to successful treatment. For both diagnosis and treatment, we rely on scientific data and on a combination of the various branches of knowledge represented by biology and bacteriology, pharmacology, physiology and pathology. Each of these, and all of them together, enter into our thinking. In other words, what we are practicing today is not just medicine in a limited sense. We are really practicing *knowledge*, for our arsenal has been enlarged to include the whole apparatus of science. Even beyond the patient's illness, we search further and strive to learn what we can of the nature of the illness itself, until we can find answers for the questions that science has still left us unanswered. As wielders of knowledge, we not only must master what we have, but must reach out to gain more. Napoleon told his army, "Every soldier carries a marshal's baton in his knapsack," and every practicing doctor, in this sense, should feel that to some degree he carries on a research assignment, however small; knowledge comes not only from the laboratory but from the great bulk of practice and experience. The advances of science are valueless until they are correlated with the clinical results obtained by doctors treating patients.

Very naturally, a major portion of what we have called the Impact of Knowledge falls upon educational centers; and it is this fact that vindicates the policy of medical schools in requiring evidence of scholastic ability so much more stringently than ever before. Nevertheless, admissions committees must also bear in mind that more than a mere facility in the academic field is necessary. The attributes of the scholar, which now become so pre-eminently important, can not displace the other essential qualifications of practitioners. Although the complexity of modern science requires that admissions officers *increase* their emphasis upon applicants' intellectual capabilities and development, it should not permit them to *diminish* their previous emphasis on moral and ethical standards; on a spirit of self-sacrifice and sympathy; on humanitarian motives; and on unsparing energy. Unfortunately, these latter qualities may very often be weak or absent in the type of intellectual who attains high marks in his college courses, without other achievements. The point for deans and professors to remember is that the student of today should not be less of a man, just because he is more of an intellectual.

If a change of emphasis constitutes the first effect of the new knowledge, a change of technics

may be said to characterize the second. This begins with the obvious changes in apparatus and equipment, drugs and operations, therapies and regimens. As more and more skill is called for in surgery, there is more and more need for specialized instrumentation. Similarly, more elaborate diagnostic devices and expanded laboratory facilities have become essential to various medical departments, to such an extent that the modern doctor finds it difficult to practice outside the walls of a clinic or hospital. Long since passed, or rapidly passing, are the old technics practiced in the home. In fact, no recently graduated interne would seriously consider operating on a kitchen table, or administering ether in a back room, or whittling out a slat of wood in the barn to splint a fracture. Without intimating any condemnation, we may say that modern medicine, in its vast complexity, is largely confined to the modern medical center.

Beyond these more mechanical and practical aspects, medicine has undergone a fundamental change in patterns of thought. The old doctor relied necessarily on observation and judgment—both of which qualities he developed of himself and in himself. This required a combination of deductive and inductive thinking. But the modern tendency is to rely upon laboratory data. Indeed scientific tests are so essential today that one old-time practitioner remarked scornfully to his son, "Saucy science has taken over the profession." Notwithstanding its many great advantages, it may be that science today gives us too much help; or perhaps, more correctly it may be said that we lean on it too much. In a sense, we are plagued with a surfeit of knowledge, just as we are plagued with a surfeit of automobiles. No one has to walk any more; and no one has to think any more—a fact that sometimes becomes appallingly apparent in teaching hospitals. Here, there is a tendency to forget that knowledge, at best, is merely a tool with which the thinking man equips himself. Facts and figures, no matter how scientific, must not be allowed to make decisions, but only to guide man in making them. This is particularly true in the medical profession, where so many imponderable human factors are involved that the physician needs his best judgment, intuition and experience to correlate them. He seldom knows the answer, unless he *thinks* the answer: St. Paul called attention to this truth long ago, in his epistle to the Corinthians: "He that thinketh he knoweth anything, knoweth nothing yet as he ought to know."

The last aspect that we have time to discuss among changes arising from the impact of medical knowledge is subtler and more fundamental than the others—a change in the doctor's point of view. The availability of such a great amount of medical knowledge today necessarily creates an intellectual—that is, a *scientifically* intellectual—point of view. In former days, when disease and death were so often triumphant, and when medicine it-

self offered so little aid, the point of view was far more humanitarian, far more sympathetic, far more spiritual. A doctor of old stood like a shield between the patient and the illness. He formed a refuge in his own character, against weakness and fear, against despair and grief. Where scientific cures were not possible, reassurance, cheerfulness, and courage were called upon to the utmost. The doctor learned the truth of Walt Whitman's maxim, "I convince by my presence." The loss of this personal dedication becomes more apparent as scientific medicine marches forward; and no doubt this accounts in great part for the increase in malpractice suits, and for the decrease in the prestige accorded the medical profession as a whole. Whether we like it or not, medicine today is to some extent degenerating into a socialized, institutionalized, and commercialized service—scientifically impersonal, and without the warmth of sympathetic friendship. Yet, as we criticize this condition, we realize also that the same change which brings it about has also enabled medicine to save innumerable lives today, in contrast to the few that were saved formerly.

CONCLUSION

We must not conclude a review of this sort on a discouraging or pessimistic note, for when all factors are considered, the outlook for the future is extraordinarily brilliant. If we call this an age of knowledge, the next generation will have brought so much more progress that our successors will look back at our times as an age of ignorance. Science is streaking ahead so fast that it is like a plane speeding through the sound barrier. We glance up at the place where we hear it passing, but the sky is empty, for it has already reached the farther horizon. In this marvelous age of ours, we must fix our thoughts on that far horizon, where a still more marvelous age is about to dawn. Whatever it brings, we may be sure that the doctor's role will be increasingly challenging, in proportion as the powers of healing increase. Such a future seems profound and limitless.



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The Saskatchewan Story

C. W. BAUGH, M.D.

Saskatoon, Saskatchewan

AS A FULL-TIME MEMBER of the Department of Medicine at the University of Saskatchewan, I am possibly less directly affected by the health plan than are some of my colleagues. One might, therefore, expect that I would be a little more objective about the situation than those more directly involved. However, my feelings are just as strong as are those of the vast majority of my colleagues. On the other hand, I hold certain views about some of the basic issues involved which perhaps are not generally accepted. I feel that these issues are important and fundamental to a solution of the dilemma of "medicare," and I intend to discuss them here. I quite realize that not all of you will agree with my position, and I should like to make it clear that the views I shall present are my own, and not necessarily the official attitude of the College of Physicians in Saskatchewan or of the College of Medicine at the University of Saskatchewan.

For reasons which will become clear, the controversy in Saskatchewan involves fundamental differences in political philosophy between the medical profession and the government, and I hope you will appreciate that our Saskatchewan government is a bit peculiar in this respect. Yet the socialist movement has no monopoly on state control of private enterprises, and it would be a serious error for you to allow yourselves to be lulled into a sense of security because you are not burdened with a socialist regime. There are many examples, both in your country and in ours, to show that all governments are developing more and more socialistic tendencies.

I might add at this point that despite the fact that I shall continually refer to the dangers of the socialist movement, I am in no way connected with any of the right-wing groups that have sprung up in the last few years, nor am I very sympathetic toward many of their viewpoints. We all like to think we are treading the middle of the road, but no matter what we do, some group will consider us extremists.

Dr. Baugh gave this address in Des Moines, on April 8, 1963, at the Annual Meeting of the Iowa Medical Society.

HISTORY OF THE SASKATCHEWAN CONTROVERSY

I should like to begin by reviewing some of the events which led to the present dilemma. In 1948 at the annual meeting of the College of Physicians and Surgeons of Saskatchewan, the following resolution was adopted:

"We are in favor of state-aided contributory health insurance on a reasonable fee-for-service rendered basis which shall include every resident of the province, provided that the administration is put in the hands of a non-political, independent commission on which the medical profession is adequately represented."

This statement was made long before the Government of the Province of Saskatchewan proposed its health insurance scheme, although when elected four years before, it had promised that it would introduce such a plan. I am sure that some of you will immediately say that the medical profession went too far in adopting this resolution, and that it must have been a group of socialists at heart. I can't agree with that view, and in rebuttal I should like to point out that a health insurance plan based on the principles of that resolution wouldn't endanger professional freedom, whereas the Medical Care Insurance Act now in effect in Saskatchewan poses a very definite threat. At that time, the Saskatchewan Government was too much involved in its hospitalization plan to consider extending health services of other sorts. The Government stated, at that time, that the College of Physicians and Surgeons would be consulted before it proceeded with such a plan.

Without any such consultation, however, the Government subsequently announced a plan for complete health care, during a by-election campaign in a small community. When the College of Physicians and Surgeons asked for more information, it was again reassured that it would be consulted and would have ample opportunity to make representations.

At the annual meeting of the College in 1959, the members first stated their opposition to the introduction of a compulsory, government-controlled, province-wide medical care plan. At the same time, the College endorsed the future extension of health insurance benefits through the existing agencies.

Subsequently, many mistakes were made both by the Government and by the College, but it wouldn't be worthwhile for me to review them

all. However, the fundamental difference of opinion between the Government and the College was clear at that time.

In December, 1959, Premier Douglas announced the five principles of his plan: (1) prepayment principle; (2) universal coverage; (3) high quality service; (4) administration by the Department of Public Health or an agency responsible to government; and (5) acceptability to both those providing and those receiving services.

I should like to draw your attention particularly to the fifth point, and let you know what the premier had to say about it. You may assume that the Saskatoon Agreement, about which I shall speak later, has meant that Mr. Douglas was able to keep this promise. I assure you that this certainly is not the case. As happens in many disputes, we accepted a compromise, for the time being, so that reasonably normal medical services could be restored. Mr. Douglas was asked the following question by a physician during a TV debate: "Doesn't the fifth of your principles require acceptability to those providing and those receiving service?" Mr. Douglas' reply is of considerable interest and was as follows: "I would think, Doctor, that is somewhat of a reflection on my integrity. I have stated that the Government recognized that a plan of this sort will not work unless there is good will and cooperation on both sides, and we will have to keep trying and negotiating until we work out a program which is acceptable to both sides. You can no more take a doctor and make him practice medicine than you can take a horse to the water and make him drink. We recognize that." This seemed a fairly clear statement, and I can only say that later events suggested that Mr. Douglas must have changed his mind.

Subsequently, an Advisory Planning Committee on Medical Care, better known as the Thompson Committee, was appointed. The Committee's original terms of reference related solely to the preparation of a report to the minister of health in regard to a universal government-controlled plan of province-wide medical care. The College of Physicians and Surgeons, however, refused to appoint delegates to this Committee until its terms of reference were broadened to include an overall study of the health needs of the Province. The Government showed its hand rather clearly at that time, and the College suffered in the public's eye by appearing uncooperative. The terms of reference were broadened, however, and three physician members were appointed to the Committee. The College of Physicians, quite rightly, felt that any study of the health needs of the people must include consideration of many other problems besides health insurance. These included improved mental health services; increased facilities for the care of the aged, chronically ill

and convalescent; increased numbers of active-treatment beds in general hospitals; improved rehabilitation services; and better facilities for the detection of visual and auditory impairment.

These events took place with a provincial election in the offing. Without any doubt, the Cooperative Commonwealth Federation (CCF) Government made the question of health insurance a major political issue. As the election approached, much bad feeling was generated on both sides through the various news media and at political rallies. For a time, the really fundamental issues were totally lost among many emotional statements. One heard a great deal about how the government's plan would interfere with the doctor-patient relationship and would result in a general deterioration of medical care. I don't mean to deny these possibilities, but they did not represent the fundamental issue, nor do they now. In this regard, when I was on the East Coast last spring, at the time when the King-Anderson Bill was under attack, I had an opportunity to read the New York and New Jersey newspapers, and found that the articles they contained bore a close resemblance to what I had read in Saskatchewan three years earlier. The arguments and statements had little bearing on what was really at stake. However it must be recognized that plans of this type represent the thin edge of the wedge.

The CCF Government won the Saskatchewan election, and Mr. Douglas subsequently claimed that his victory constituted a mandate to implement his plan. Since the CCF Party received only 41 per cent of the popular vote, it is difficult to say whether he truly had such a mandate. In retrospect, it was clear, however, that the medical profession had not distinguished itself in the political battle prior to the election, and had made a bad impression in the public's mind. I think that more recent events have largely corrected this, and that the general public in Saskatchewan now realizes the basis for the medical profession's fears.

The Government claimed that its plan was essentially based on the Thompson Committee's report. However, since the Act was made public just a few days after the Government received the report, it seems fair to say that the Thompson Committee report was a reflection of what the Government had wanted. We probably shall never know why the Thompson Committee was so biased in the direction of the Government's desires. Assessment of this bias involves personalities, and undoubtedly there were many other factors of which none of us were aware. It is my feeling, however, that the chairman, Dr. Thompson—who, incidentally, is not a physician but a former president of the University of Saskatchewan—was, in a sense, more concerned about the Government than he was about the medical profession. When

Mr. Erb resigned from the post of minister of health because Mr. Douglas had failed to fulfill the fifth of his principles, he confirmed that the Act had been written before the Interim Report was received. After the Act was published, Dr. Thompson was quoted as saying that it included all the major recommendations of his Committee. If he really believed that, he was not truly interested in protecting the medical profession from the Government.

Be that as it may, the Thompson Committee's Interim Report is a scholarly document, and it was amazing that such a thorough study of the question of health services could have been completed and presented in detail in such a short time. The premise on which the logical arguments of the Thompson Committee Report are based is that any health plan must provide equal health insurance benefits for all. I do not propose to debate the pros and cons of that premise. Suffice it to say that the provision of equal opportunity for medical attention and the provision of equal health insurance benefits are not synonymous. For example, government contributions to insurance premiums could be a direct subsidy to all citizens, or just to those citizens who needed a subsidy, thus providing the same opportunity without compulsion. However, the Committee felt that equal benefits for all could be achieved only through a universal compulsory plan. The alternative, proposed by the Saskatchewan College of Physicians and Surgeons and the Canadian Medical Association, was the extension of voluntary agencies and the public subsidization of those agencies. Among the Committee's reasons for rejecting this proposal were that it would not lead to universal coverage, that there would not be even coverage of the population, and that public funds would be administered by non-government agencies not under direct public control. In my opinion, the latter two arguments were invalid.

The Committee, however, clearly stated several corollaries to its decision by which they hoped to guarantee the freedom of the medical profession. I should like to quote two statements from the report to indicate what I mean. I hope it will be abundantly clear to you that the Government has not fulfilled these prerequisites:

"The administration of the program must to the widest possible extent be protected from political patronage, political expediency and damaging over-emphasis of bureaucratic centralization.

"A universal medical care insurance plan in the province of Saskatchewan should be administered by a commission which should be free from political interference and influence."

The type of health plan which the Thompson Committee recommended implied that the Committee did not accept the principle that all aspects

of the practice of medicine should remain under the control of the College of Physicians and Surgeons without government interference. This is a fundamental point, and one can only assume that the Committee did not feel past performance justified such a plan, or that the Government should merely maintain economic control purely through an audit system. Furthermore, it was the opinion of the majority of the members of the Thompson Committee that the Government could be trusted to set up a system that would remain free of political influence. One can describe such an attitude only as naive.

Lastly, the members of the Thompson Committee clearly were much less concerned about government intervention in the affairs of society than are a great many private citizens. The document contains many scholarly dissertations on matters not directly concerned with how the plan should operate, but I can find no reference to this important issue anywhere. Incidentally, the three physicians appointed to the Thompson Committee submitted a minority report and did not concur with the principles of the majority report.

THE MEDICAL CARE INSURANCE ACT

I should now like to discuss certain aspects of the Act so that you will be clear about why we felt justified in taking a strong stand against it, and eventually in discontinuing normal practice and establishing the emergency service. The Medical Care Insurance Act provided for far more than medical insurance. When the minister of health, Mr. Davies, appeared before the Hall Royal Commission, which was set up by the federal government, he was asked if the Act provided for economic control of the profession. His answer was "Yes." He was then asked, "Does this not constitute complete control of the profession?" and the records show that his answer was again "Yes."

The Act provides for the establishment of a commission to run the insurance plan which, in essence, is completely under government control. Its actions so far have demonstrated this clearly. Originally, the medical representation on the commission was in no way representative of the College of Physicians and Surgeons, but since that time three additional appointments have been made to it, with the approval of the College.

Although there are many points in the original Act which are open to criticism, one of the most contentious aspects was Section 49, much of which remains with us still. It empowered the commission to arrange the method by which physicians were to be paid, and the commission still has the power to alter the rate of reimbursement, which at present is 85 per cent of the fee schedule. Originally, the commission was empowered to decide how doctors were to be paid for their services, to

license physicians, and to take away licenses without the approval of the College. It was given the right to request far more information than is necessary for the processing of insurance claims. It actually was granted the right to make regulations governing the entire practice of medicine, since it could dictate the terms and conditions under which a physician could provide service to his patient. I am sure you appreciate that practice under such an Act would be intolerable. There was even an item in the original Section 49 that dealt with the improvement of the quality of services provided under the Act. It didn't specifically say insured services, and could just as well have been interpreted as meaning medical services.

The final abomination with regard to this Act was Bill 69, an amendment which made the government's intent to control the profession even clearer. In this amendment, inserted as Section 28A, the commission was made the legal agent of all beneficiaries with respect to matters relating to payment for services. Among other things, it gave the commission authority to take legal action whenever it saw fit, and it provided that "where through mistake in law or fact a sum has been paid for the providing of an insured service" the commission could "take such action as it deems necessary or desirable to recover the amount paid." When this amendment was announced, its only effect was to unite the medical profession firmly, and to make it clear to everyone just what the medical profession was up against. It has now been deleted and replaced by a milder section giving the commission certain powers relating only to civil servants.

Further negotiations served only to emphasize the fundamental differences in the viewpoints of the protagonists. The medical profession was then placed in an extremely difficult position. We felt that this government plan was clearly state medicine and that we couldn't possibly cooperate in it. Therefore, it was decided that the practice of medicine as it was normally carried out would have to cease. I don't feel that this action should be interpreted as a strike organized by a union, but rather as an almost unanimous decision by individual members of the medical profession. There is one valid argument to the contrary which I shall discuss later.

Now a decision to discontinue practice raises very serious moral issues, as you can imagine. The College took this step as a final attempt to force further negotiations that would lead to a settlement and would allow the profession to retain its freedom.

A few days before the deadline, regulations were made by the Government permitting physicians to practice outside the Act. In addition, the Government asserted that two of the most

contentious sections of the Act would be repealed. These actions made the position of the College more difficult, since practice outside the Act was then theoretically possible. However, our legal advisors felt that these changes in regulations and promises of further modifications were not necessarily binding, and therefore that we should demand that the Act be amended by the Legislature.

THE SO-CALLED DOCTORS' STRIKE

During this period, a great many groups of individuals, including representatives of both rural and urban municipalities, attempted to act as intermediaries in bringing the two sides together. However, all efforts failed, the Government remained adamant, and at twelve midnight on July 1, 1962, our well-publicized so-called "strike" began.

I should like to say just a few words about this "strike," for I gather that many accounts of what occurred were grossly inaccurate. Furthermore, in the middle of our difficulties, a widely publicized statement was made by one of my distinguished colleagues, claiming that the profession was being unethical and should resume normal practice forthwith. I shall leave you to judge the ethics for yourselves, and shall merely tell you what actually happened with regard to the withdrawal of normal medical service. I can speak with authority only about what went on in Saskatoon, and more particularly at the University Hospital. I am quite aware that the situation was different in the country, but one must remember that there are certain unusual features about any rural practice where communities are separated from one another by considerable distances.

The available doctors were carefully organized into a series of medical centers, several in the larger cities and the others in smaller communities that were roughly equidistant from each other. Physicians, chiefly general practitioners, were available 24 hours a day to see any type of problem about which a patient felt he needed attention. Obviously, patients with minor and functional complaints received less attention than they might have under normal circumstances. No patient was refused care, however, much advice was given by telephone, and where necessary and feasible, even house calls were made. Furthermore, at many emergency centers, specialists were also on 24-hour call. Quite naturally, some of the rural centers had few specialists or none at all, but it was possible for the general practitioner to obtain a specialist's opinion about any problem that he didn't feel competent to handle. In other words, the practice of medicine was transferred to hospital bases, and placed on an efficient, impersonal basis that required far less medical personnel than under normal circumstances. The system was inconvenient for the patients in some ways, and oc-

casionally meant a long trip to the nearest emergency center. However, you must understand that some people in Saskatchewan have to travel many miles to find a physician in the best of times, and often the physician, being the only one in the area, is unavailable because of other problems including surgery and obstetrics. Furthermore, consultants are available only in the few larger communities in the province.

It was my impression that the service provided at the University Hospital Out-patient and Emergency Departments was excellent, and more than one patient told us that they had never been so well looked after. I had experience of the emergency service both as a consultant and, during the final week, as a general practitioner, and thus I feel competent to speak about what went on at least in one area of Saskatoon. Naturally, people suffered inconveniences, but by and large they received at least the attention they normally expect. I never heard any blame attached to the medical profession for the few mishaps that occurred. I see no reason to differentiate between those physicians who worked on the emergency plan and those who went on vacation. Many of the latter returned to carry the load during the last week, and obviously were prepared to carry on for much longer. I can end my comments about the emergency service only by asking, "Does this sound like a strike, by anybody's definition?" and by asking further, "Was this what one would truly call an emergency service?"

During the emergency period, the position of the Council was weakened by several events: (1) The Government announced that it would call the Legislature. (2) Some physicians who continued to practice demonstrated that it was possible to work outside the Act. (3) Imported physicians began to arrive, and in addition a few socialist physicians in our midst began to organize cooperative clinics. I shall refer to these again later. (4) It became obvious that the Government was not going to weaken. Furthermore, it could remain in power until 1965, and its members were obviously willing to sacrifice their political lives for the sake of their health plan. (5) The medical profession, therefore, was faced with the prospect of a long-term stand, and it was obvious that this would pose great difficulties. Although the emergency service had functioned efficiently, it was clear that it could not, or would not, remain a safe service indefinitely. In addition, we were losing physicians at an alarming rate, and the sacrifice was hard to justify.

THE SASKATOON AGREEMENT AND SUBSEQUENT CHANGES IN THE ACT

At this stage, Dr. Dalglish delivered the counter proposals of the College of Physicians and Surgeons at the New Democratic Party convention in

Saskatoon. Subsequently, Lord Taylor arrived from Britain, and negotiations were resumed a few days later. Lord Taylor has been given more credit than he deserves in relation to the settlement, although he most certainly was of considerable help. Don't forget that this man was a labor MP and an architect of the British Health Plan, and therefore hardly impartial. However, he did persuade the Government to accept the continuation of the private agencies, and I shall comment again on this later. One feels that he persuaded the College Council to accept a settlement much more favorable to the Government than to the profession, and that actually nothing new of any consequence was conceded to the profession. However, the Council felt that it had no alternative, and actually had accepted the monopolistic principle prior to his intervention. In any event, we are grateful to him for his help in providing a face-saving settlement that we hope will achieve our aims in the long run.

One needs to study the Saskatoon Agreement carefully to understand all its innuendos. I shall try to outline only its principles and to explain why they are important to us and why we don't feel that we have a satisfactory settlement.

The Agreement and subsequent changes in the Act provide that a physician may practice without direct reference to the commission. Certain private non-profit insurance agencies are recognized, in a sense, and most physicians belong to one or more of them. In addition, if the physician is socialistic, eccentric, mentally unbalanced or intellectually incompetent, he may deal directly with the commission. This may be entirely on a fee-for-service basis, or on a retainer along with a smaller fee-for-service or fixed remuneration. With certain exceptions, the patient is compelled to pay a premium for physician's services insurance. He may consult any physician and forward his bills to the commission for payment at 85 per cent of the fee schedule. The patient himself is responsible for the remaining 15 per cent, unless the physician accepts 85 per cent as payment in full. Obviously, this is an inducement for citizens to join one of the private non-profit plans. They charge a very small enrollment fee, and for an additional fee will give a number of benefits not offered by the Saskatchewan Health Insurance Plan, such as private rooms, special nurses, etc. If he joins one of these agencies, his physician will forward his bills directly to the agency and accept 85 per cent as payment in full. Now I don't expect you to approve of this third-party principle any more than I do, but it was with us long before we had Mr. Douglas to contend with.

The difficulty with the agencies as they are now set up is that they are merely rubber stamps, and don't assess their accounts except in problem cases where the commission refuses what the

agency feels is a just account. In essence, one is dealing with the commission itself, but in an indirect manner through the private agency. You may think we have undertaken a lot of unnecessary bother to avoid dealing with the Government. Furthermore, by joining an agency, a physician is actually practicing under the Act when dealing with patients who are members of the private plan. To remain entirely outside the Act, he must not belong to any of the plans, and herein is one of our dilemmas. If we don't support these agencies, they quite naturally will collapse. If we do support them, we are in essence practicing under the Act.

Obviously, we are banking heavily on a resounding defeat of the CCF Government in 1964 or 1965. It would be quite possible for another administration, without taking anything away from the people, to give a direct subsidy to these agencies and allow them to operate entirely independent of government with a yearly public audit. It is really for this reason, and for this reason alone, that the Council of the College of Physicians fought to retain this principle. It has become abundantly clear to us that many physicians wouldn't, or couldn't, practice without a third-party arrangement. They appear unable to deal directly with their patients regarding bills. Obviously, it is preferable that they deal with a private agency than with the commission. This represents our only hope of eventually breaking the monopoly which now exists.

One of the unfortunate consequences of the emergency period was the establishment of what are called medical cooperative clinics. These clinics pose no serious professional threat, but to some physicians they are a real economic threat. Although they are having growing pains, and some have been forced to reduce their operations, if not to discontinue them, they are certainly still with us. They provide a patient with a third alternative. He can join the medical co-op for a small fee, and then the clinic doctor submits his bill to the commission directly and accepts 85 per cent of the fee schedule. In other words, physicians in the co-op clinic subsidize the Government, whereas most physicians would prefer to subsidize the private plans if subsidization of any sort is necessary. One fears that in some under-the-table manner these co-op men may be receiving financial assistance directly from the Government in addition to reimbursement from the commission. There have been many difficulties with the co-ops which time does not permit me to discuss.

One of the problems with the Saskatoon Agreement is that it provides that a community may request a physician *where one is not available practicing under the Act*. This, of course, implies that either the community contains sufficient NDP sympathizers to support a physician, or there is

a hidden subsidy that will attract a physician. You can imagine the type of economic pressure that could be applied in a community with two physicians, one a government man and the other a supporter of the views of the Canadian Medical Association and the Saskatchewan College of Physicians and Surgeons. Indeed, we feel we have evidence that this type of pressure is being applied, but more of this later.

PRESENT CONDITIONS IN SASKATCHEWAN

Now a word about how things are going in Saskatchewan. The vast majority of physicians are members of one of the private agencies. A few physicians deal directly with the commission. The Government claims that over 100 of our 900 physicians are doing so, but the College of Physicians contends that if there are that many, they must include every physician who, in some special circumstance, may submit a bill directly to the commission for payment. The majority of physicians are charging 100 per cent of their fees to patients not enrolled in a private agency, and that, please remember, is their privilege. Some think that charging 100 per cent will merely encourage the development of more co-ops and increase their membership, and such physicians charge all patients 85 per cent, whether or not they belong to a private plan.

One would have to describe the situation as an uneasy truce, in which tempers flare, from time to time, on both sides. There seems to be a general air of unhappiness and of resignation. The College of Physicians has some evidence to suggest that payment of certain physicians' accounts is being deliberately delayed. One of our private agencies has corroborated that impression, but the Government and the commission both hotly deny that this is the case. One knows physicians personally, however, who have received only a small proportion of their submitted fees. In addition, one notes that certain physicians located in areas where they are surrounded by physicians who deal directly with the commission are having a particularly bad time and are receiving only a fraction of their submitted accounts. One cannot be sure that these instances represent deliberate economic pressure, but one can't help being suspicious.

Lastly, the problem of our radiologists and pathologists has not been resolved. The Government wishes to pay them through the Hospitalization Act, but these two professional groups, quite rightly, do not wish to be segregated from the remainder of the profession. The Government has expressed a willingness to allow them to operate on a fee-for-service basis, with direct billing to the agency. This, of course, deprives them of the right to deal directly with their patients, and that

is the whole basis for our dispute with the Government.

We have had an interesting example of how the Government and the commission can make new rules and regulations to fit their latest whims. Certain benefits for medical expenses are provided under our compulsory automobile insurance plan, which is entirely run by the Government, and this is clearly stated in the Automobile Insurance Act. In addition, the Medical Care Act excludes this coverage. Without any legislative action, however, a regulation was made by the minister of health to the effect that medical expenses related to automobile insurance would now be covered under the Medical Care Insurance Act. As usual with this Government, the negotiations and discussion consisted simply of a statement by the Government which we first learned about in the newspaper.

On the other hand, the Medical Care Insurance Act excludes coverage for treatment of any illness that is provided for under the Cancer Act. As a hematologist much interested in the various leukemias and lymphomas, I find this very trying personally. An account submitted, via the patient, to the commission with a diagnosis of leukemia will be turned down. On the other hand, if I register the patient with the Cancer Commission, I am no better off, since it will not pay for medical treatment and prefers to have treatment carried out entirely by its own staff. One could go on and on about our problems, but I think that I have said enough to make it clear that the situation in Saskatchewan is far from settled.

One other problem that developed during the crisis, and one that worries me greatly, concerns relationships among physicians with different points of view. The members of the medical profession are quite a heterogeneous group and include some whose views certainly clash with my own. A few physicians who share the majority opinion are indulging in some childish behavior. Both clinically and socially, they are ostracizing those who disagree with them. Although I am bitterly opposed to the CCF Government, and to the socialist movement in general, I cannot condone such immature behavior, and think it doesn't speak well for the profession.

We have lost a great many physicians during the past year. More than 100 have left permanently, although some of them have been replaced. One of our chief concerns, aside from the actual numerical losses, is the fact that many of the departing doctors are highly qualified, well trained specialists who will be difficult to replace.

DOCTORS EVERYWHERE SHOULD TAKE WARNING

I should like now to examine the fundamental issues which, I feel, were responsible for the recent developments in Saskatchewan and which are

likely to provoke similar events elsewhere on this continent. To my mind, there are only two issues. The first is political and relates to the role of government in society, and the second concerns the medical profession and what I consider certain failures of professional responsibility. Obviously, Saskatchewan was the initial battlefield because it happened to have a socialist government. Other governments, however, have demonstrated many signs and symptoms of the socialist illness, and therefore one can anticipate further difficulties shortly.

I shall deal first with the political question. I doubt that any of you know from what the following brief excerpts have been taken:

"We aim to replace the present capitalist system with its inherent injustice and inhumanity with a social order in which the domination and exploitation of one class by another will be eliminated.

"The _____ aims at political power in order to put an end to this capitalist domination.

"No _____ government will rest content until it has eradicated capitalism and put into operation the full program of socialized planning which will lead to the establishment in Canada of _____."

No, I have not been quoting from Marx, although I might well have been. These statements, and many more like them, were contained in the Regina Manifesto of the Cooperative Commonwealth Federation in 1935, and time doesn't appear to have altered the party's basic aims. In attempting to understand the thinking of the people who wrote that manifesto, one must remember that at that time Saskatchewan was plagued by depression and drought. I have no doubt that those of us elsewhere in Canada, who were relatively secure, were not doing nearly enough for our less fortunate fellow citizens. These quotations merely emphasize the deep feelings of the socialist group at that time. Subsequently, as things improved in Saskatchewan, the CCF modified its position to some extent, but fundamentally it still holds the same views.

We must all give a great deal of thought to the rights of government and the rights of private citizens. We must be absolutely clear about these rights, so as to be aware of any infringements. Obviously, government has the right to assess taxes, and my definition of *tax* is money collected in relation to income, property or purchases. It also has the right to make laws and to see that they are enforced. Thus, we accept laws saying that it is compulsory to go to school, to buy car insurance or hospital insurance, to pay taxes and so on. Furthermore, it is government's responsibility to look after those members of society who cannot look after themselves.

Now the CCF-NDP Party, and socialists in general, feel that they have a right to go a great deal further. They believe that most matters are bet-

ter managed by the state. In Saskatchewan, all utilities (including telephones and transportation) are government agencies. Furthermore, the present Government feels that it has a responsibility to provide for *all* members of the state, and its eventual aim apparently is to provide equal benefits for all.

I feel that it is government's responsibility to look after *only* those members of society who cannot look after themselves, and as a privileged member of society, I am quite prepared to pay taxes to provide funds for this purpose. It is government's role to coordinate and integrate existing services, rather than to absorb or supplant them. Government is justified in interfering with the affairs of society only under certain well defined circumstances. These include (1) where there is a threat to the freedom of any individual or group; (2) where people do not have resources to obtain adequate food and shelter and to meet the exigencies of life; and (3) where a clear majority of the people request that action be taken.

Under normal circumstances, government intervention should be a last resort. Government's role is to look after those people who cannot adequately care for themselves, and its role in such instances is purely to help those people care for themselves. Thus, in considering the possibility of a federally supported or subsidized health insurance plan, we must understand this principle thoroughly before working out the details.

I am quite prepared to accept extensive government participation in health insurance, provided that government doesn't attempt to create a centralized bureaucracy. I am an advocate of free enterprise. I admit that it has many defects, but surely it is preferable to work hard to correct its faults, than to abandon it.

This brings me to the second issue to which I referred. This concerns the ways in which the medical profession has contributed to the development of socialized medicine. I feel that, in some way, we have failed to fulfill our professional responsibility in regard to the cost of medical care. There is an element of truth in the title of a paper-back book *IT'S CHEAPER TO DIE*, a volume in which the medical profession is criticized. We must accept as fact that there is a need to redistribute the high cost of medical care, and we must further accept that the privileged members of society should bear a fairly large share of that load. Thus, it would appear that government has a role to play in this field. Yet we don't have to agree that government should assume entire control of physicians' services, and we don't have to accept any form of control of the profession by government, *provided that we develop adequate controls of our own*.

When we improve our controls, however, we must be careful not to create an internal bureaucracy which would be just as intolerable as one

created by government. To me, this seems to be the principal fear of those who oppose the type of control I have in mind, and I think that their fear is to some extent quite justified.

Better controls are needed, first, in curtailing the abuse of insurance schemes by some members of our profession. Anyone who has served on the reviewing board of a private agency is perfectly aware of what I mean. Some physicians bill the agencies for needless office visits and unnecessary procedures, and occasionally indulge in outright fraud. It is imperative that we attempt to eliminate these practices by means of a system of penalties. At the same time, we must make sure that we are fair in all respects to the physicians submitting accounts. Furthermore, if we altered our third-party arrangements so that the agencies were refunding money to patients after submission of receipts, the patients would act as an important control on excessive billing. To my mind, the present arrangement under which we deal directly with a third party constitutes one of our greatest follies. One finds, in essence, that we physicians have become the third party, and are subject to attack from both the insured and the insurer. It's too big a price to pay for any type of guaranteed payment.

The second area where controls are defective relates to poor medical practice by what I like to think are a minority of our profession. It is true that we have disciplinary committees, but they have not been able effectively to penalize the few who discredit the profession. As things stand, it is almost necessary for a physician to have broken the law or to have lost a libel suit before action is taken against him. There are statistics to support the suggestion that unnecessary surgery is performed and that medical problems are treated without an accurate diagnosis, and there are reasons to suspect that consultant services are not used as freely as they should be. As a consultant, I occasionally see cases that have been badly handled. However, it would be senseless for me to criticize the physician who has had the intelligence or the courage or self-confidence or whatever to ask for a second opinion. I am much more concerned about the doctors who don't call in consultants, or who ask for a second physician's opinion purely for moral support.

In addition, to my mind, there is no question that certain aspects of our fee schedules are unreasonable. Fees for various procedures are not proportionate to the time involved and to the previous training and experience of the physicians who perform them. Obviously, the most serious defects relate to certain surgical fees.

There are other areas where reform is needed, but these have no more than an indirect relationship to our immediate problem. For completeness, one might mention that certain aspects of organ-

ized medicine are unhealthy. In making this statement, I am referring to my own country, although I have no reason to doubt that the same problems exist in your country too. I mentioned earlier that the decision to provide an emergency service was arrived at by a group of individuals. Unions have been criticized for having stand-up votes in which those who are opposed to a resolution or proposed course of action, don't feel entirely free to express their opposition, for fear of future reprisal. The same system is used in our medical societies!

Furthermore, one sees a small proportion of the members who are interested in medical politics go from one job to another, and continue to make decisions for the organization year after year. That they do so is not entirely their fault, for the remainder of the profession is generally apathetic. One hears, however, of people who have attempted to become active in organized medicine but have been rebuffed.

You are aware of the problems that relate to the pharmaceutical industry, and I have no intention of discussing them.

Lastly, we have failed to give adequate economic support to our young doctors during their postgraduate training period. In addition, the practice of medicine in general would probably improve if we required longer periods of postgraduate training for all physicians.

I am convinced that these matters are at the root of our difficulties. In our discussions it was perfectly clear that government officials felt there was a need for an insurance plan to overcome economic inequities. At the same time, however, they felt the profession should be brought under state control to prevent abuse of the insurance plan and to maintain a high level of medical practice. Therefore, I urge you to give serious thought to all these matters and others that may seem more important to you. If these problems are resolved or are in the process of resolution, I think that government can be approached (and should be approached before they approach you) and that a means can be found to avoid the present high cost of medical care without the sacrifice of our professional liberty.

CONCLUSION

In summary, if we are to achieve a system of health insurance that allows us complete professional freedom, we must not confine our efforts to an attempt to manipulate government. We must have both medical and political reforms if we are to achieve our aims. Failure to appreciate this and to do something about it immediately, I predict, will sooner or later mean the development of a nationwide monopolistic approach to the entire problem of health insurance.

Flying Physicians' Association

The eighth annual national convention of the Flying Physicians Association will be held at the Hilton Inn, Aurora, Illinois from August 18 through August 23. Approximately 800 persons connected with the international organization will participate in the six-day program. Members from 49 states, Canada and Mexico are expected to fly with their families to the convention site.

As in the past, the continuing theme of all the business seminars and lectures will be the over-riding importance of safety as it relates to the operation of private aircraft. The speakers will include H. L. Reighard, M.D., acting civil air surgeon, Federal Aviation Agency, Washington; Jerome Lederer, director of the Flight Safety Foundation, New York City; Charles A. Barry, M.D., chief, Center of Medical Operations, Manned Space Craft Center, Houston; G. R. Bourne, M.D., regional medical officer, Civil Aviation Medicine, Medical Services, Toronto; and Najeeb E. Hala-by, administrator, Federal Aviation Agency, Washington.

The Association was founded in 1955 to promote aviation safety and to assist in the nation's Civil Defense effort. The members are organized and prepared to fly to any part of the United States to render medical aid and assistance in the event of a major disaster.

Membership is open to all duly licensed physicians who are members of medical societies approved by the board of directors, and who hold valid pilots' certificates. Total current membership exceeds 1,600, and of that number 39 are practicing physicians in Iowa. Dr. Burns M. Byram, of Marengo, is the state chairman.

Coming Meetings

IN STATE

- Sept. 14-15 **Radiology.** SUI College of Medicine, Iowa City
- Sept. 16-17 **Annual Scientific Meeting.** Iowa Chapter of the American Academy of General Practice, Hotel Savery, Des Moines
- Sept. 18-19 **Pediatrics.** SUI College of Medicine, Iowa City

CONTINENTAL U. S.

- Aug. 4-7 **Advanced Seminars in Urology (UCLA).** University of California Residential Conference Center, Lake Arrowhead, California
- Aug. 5-9 **Sixth Annual Postgraduate Course in Pediatrics (University of Colorado School of Medicine).** Stanley Hotel, Estes Park, Colorado
- Aug. 7-9 **Anesthesiology.** University of California, Los Angeles
- Aug. 7-11 **Advanced Seminars in Internal Medicine (UCLA).** University of California Residential Conference Center, Lake Arrowhead, California
- Aug. 11-14 **American Society for Pharmacology and Experimental Therapeutics.** San Francisco
- Aug. 19-23 **Medical Audiology Workshop.** University of Colorado Medical Center, Denver
- Aug. 20-27 **International Association for the Coordination of Psychiatric and Physiological Methods and Psychology.** Washington, D. C.
- Aug. 23-24 **The Shoulder—Anatomy, Pathology and Surgery.** University of California, Los Angeles
- Aug. 25 **American Association of Electromyography and Electrodiagnosis.** Sheraton-Dallas Hotel, Dallas
- Aug. 25-30 **American Congress of Physical Medicine and Rehabilitation.** Sheraton-Dallas Hotel, Dallas
- Aug. 26 **Annual Meeting of the American Academy of Physical Medicine and Rehabilitation.** Sheraton-Dallas Hotel, Dallas
- Aug. 26-29 **American Hospital Association.** Waldorf Astoria Hotel, New York City
- Aug. 26-30 **American Physiological Society.** University of Miami, Coral Gables, Florida
- Aug. 26-30 **Gordon Research Conference on Cancer.** New London, New Hampshire
- Sept. 9-13 **Basic Mechanisms in Internal Medicine (American College of Physicians).** University of California School of Medicine, San Francisco, California.
- Sept. 16-20 **Pulmonary Disease Seminar (University of Colorado Medical Center).** Fitzsimons General Hospital, Denver, Colorado.
- Sept. 16-28 **Laryngology and Bronchoesophagology (University of Illinois College of Medicine, Department of Otolaryngology).** Chicago, Illinois.
- Sept. 20-21 **Sixteenth National Rural Health Conference.** Arlington Hotel, Hot Springs, Arkansas.
- Sept. 25-26 **23rd National Congress on Occupational Health (AMA Council on Occupational Health).** Jack Far Hotel, San Francisco, California.
- Sept. 30-Oct. 2 **Kansas City Southwest Clinical Society's 41st Annual Fall Clinical Conference.** Hotel Meuhlebach, Kansas City, Missouri.

ABROAD

- Aug. 9-15 **International Congress on Nutrition.** Edinburgh, Scotland. Write: Secretary 6th International Congress on Nutrition, Department of Clinical Chemistry, Royal Infirmary, Edinburgh
- Aug. 11-16 **Sixth International Congress of Gerontology.** Copenhagen. Write: P. From Hansen, M.D., D.I.S. Congress Service, 19 Sankt Peders Straede, Copenhagen
- Aug. 25-28 **Fifth European Congress on Rheumatic Diseases.** Stockholm. Write: Olle Lövgren, M.D., St. Eriks Sjukhus, Stockholm

- Aug. 26-30 **International Congress of Nephrology.** Prague, Czechoslovakia. Write: V. Fencel, M.D., Institute of Cardiovascular Research, Prague 4-Krc
- Aug. 26-30 **International Symposium on Radiological Health and Safety.** Vienna. Write: International Atomic Energy Agency, 11 Kartner Ring, Vienna 1
- Sept. 1-7 **International Congress on Orthopaedic Surgery and Traumatology.** Vienna. Write: Karl Chiari, Grillparzerstrasse 14, Vienna 1
- Sept. 2-6 **International Congress on Clinical Pathology.** Mexico City. Write: E. Cervera B., M.D., Asociacion Mexicana de Laboratorio Clinico, Durango 213, Mexico 7, D.F.
- Sept. 2-10 **International Congress of Genetics.** The Hague, Netherlands. Write: S. J. Geerts, 14 de Monchyplein, The Hague
- Sept. 9-13 **Conference on Cellular Control Mechanisms and Cancer.** Amsterdam. Write: O. Mühlbock, Netherlands Cancer Institute, Antoni van Leeuwenhoek-Huis, Sarphatistraat 108, Amsterdam C
- Sept. 12-14 **Anesthesia Conference.** Freiburg im Breisgau, W. Germany. Info: K. Wieners, M.D., Anästhesieabteilung und der Chirurgischen Universitätsklinik, Freiburg im Breisgau.
- Sept. 15-21 **International Congress on Occupational Health.** Madrid. Write: D. P. Sangro Torres, M.D., Instituto Nacional de Medicina y Seguridad del Trabajo, Ciudad Universitaria, Madrid
- Sept. 16-20 **Ciba Foundation Guest Symposium on Mother-Infant Interaction.** London. Write: Ciba Foundation, 41 Portland Place, London W1
- Sept. 16-22 **Ninth Congress on Vital Substances, Nutrition and Diseases of Civilization.** Lindau and Grogens, Germany. Write: Bemeroderstrasse 61, Hanover-Kirchrode, Germany
- Sept. 19-21 **Congress of the International Society of Cardiovascular Surgery.** Rome, Italy. Write: H. Haimovici, M.D., 862 Park Avenue, New York 21
- Sept. 19-22 **Fifth International Congress of General Practice.** Salzburg, Germany. Write: K. Engelmeier, M.D., Internationale Gesellschaft für Praktisch Angewandte Medizin, Langestrasse 21, Oelde, Westf. West Germany
- Sept. 22-28 **Seventeenth World Medical Assembly.** Mexico City. Write: Harry S. Gear, M.D., 10 Columbus Circle, New York 19
- Sept. 23-27 **World Federation of Neurology.** Strasbourg, France. Write: H. Fishgold, M.D., Institut Bunge, 59 rue Philippe Williot, Berchem-Antwerp, Belgium
- Sept. 23-Nov. 22 **Around the World Postgraduate Surgical Clinic Tour (International College of Surgeons).** For complete information contact the International Travel Service, Inc., 116 South Wabash Avenue, Chicago 3, Illinois
- Sept. 24-28 **Seventeenth International Tuberculosis Conference.** Rome. Write: Sec.-Gen. G. l'Ettore, via Ezio 24, Rome
- Sept. 26-28 **International Congress of Therapy.** Brussels. Write: Dr. Bauduin, Faculté de Médecine, 115 boul de Waterloo, Brussels
- Oct. **American Society of Plastic and Reconstructive Surgery.** Hawaiian Village Hotel, Honolulu. Write: T. Ray Broadbent, M.D., Secretary, 508 E. South Temple, Salt Lake City
- Oct. 6-11 **International Congress of Clinical Pathology.** Mexico City. Write: E. Cervera, M.D., Durango 213, Mexico 7, D.F.
- Nov. 5-13 **Ninth Congress of the Pan-Pacific Surgical Association.** Honolulu. Write: F. J. Pinkerton, M.D., Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13, Hawaii
- Nov. 13-Dec. 10 **First Pan-Pacific Mobile Educational Lecture Seminar.** New Zealand, Australia, Thailand, the Philippines, Hong Kong and Japan. Write Dr. F. J. Pinkerton, Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13

Scientific Articles



Primary Cardiac Tumors

A Review of Cases at the State University of Iowa Hospitals Since 1950

FRED W. FLETCHER, M. D.

Iowa City

NOW THAT MODERN cardiac surgery has advanced to the stage where one may expect that many people with primary cardiac tumors not only will survive operation but will be cured, some attention is being focused upon certain of the rare and hitherto neglected forms of heart disease.

The first primary cardiac tumor to be reported in the literature was described by M. R. Columbus in 1559,¹ and approximately 550 primary tumors of the heart have been reported since that time. In 1951 Prichard² reviewed 415 cases of cardiac neoplasm discovered at autopsy. A primary tumor of the atrium was first diagnosed antemortem in 1952,³ and in 1953 Crafoord⁴ first successfully removed a left-atrial myxoma.

Generally about 50 per cent of all primary cardiac tumors are myxomas, and about 75 per cent of these arise in the left atrium. Myxomas of the ventricle are extremely rare, six cases of left ventricular and four of right ventricular origin having been recorded in the literature. Although myxomas of the right atrium are much less frequent than those on the left side, constituting about 25 per cent of all myxomas, a recent review⁵ summarizes reports of 20 cases of myxoma of the right atrium that have been published since Prichard's review. Three additional cases of right-atrial myxoma were reported in the British literature during 1962.⁶⁻⁸

That primary intracardiac tumors are being diagnosed with increasing frequency is apparent from the many articles, both reviews and case re-

ports, which have appeared in the world literature during recent months. This sudden increase in interest is undoubtedly related to the improved diagnostic technics and to the wide availability of cardiopulmonary bypass apparatus. The clinician must suspect the presence of primary intracardiac tumor solely upon the basis of the clinical manifestations, if proper diagnostic studies are to be performed, particularly angiocardiography.

The purpose of this paper is to review six cases of primary intracardiac tumor, to focus the attention of clinicians on the broad aspects of the problem, and hopefully, to furnish clues for the future diagnosis of primary intracardiac tumor.

CASE REPORTS

Case No. 1. A 35-year-old railroad employee was admitted to the University Hospitals in July, 1952. For nine years, he had experienced episodes of severe pain, deep in the left chest, that induced fainting attacks from which he recovered in a few minutes. Weakness and shortness of breath occurred at the same time. He was able to resume work promptly after each attack, though he felt shaky. He appeared chronically ill, with signs of congestive heart failure and a temperature elevation to 102°F. Cardiac examination disclosed right ventricular overaccessibility, accentuation of mitral and pulmonic valve closure, and a blowing systolic murmur with a late diastolic rumble but without presystolic accentuation at the apex. Laboratory evaluation revealed an anemia, with a hematocrit of 31 per cent, a hemoglobin of 10 Gm. and an elevation of the sedimentation rate to 70 mm. per hour. An initial blood culture grew *Staphylococcus albus* that was felt to be no more than a contaminant, and nine subsequent cultures were negative. A photoroentgenogram revealed increased bronchovascular markings at the left base, but

Dr. Fletcher is a clinical instructor in internal medicine.

was otherwise unremarkable. An electrocardiogram was interpreted as showing an incomplete right bundle branch block, with ST-segment and T-wave abnormalities and broad notched P waves consistent with left-atrial enlargement. The clinical diagnosis was rheumatic heart disease with mitral valvular involvement.

The patient's course was one of rapid deterioration, with increasing heart failure and death on August 11, 1952. The postmortem examination revealed a pedunculated, polypoid mass measuring 5 x 3 x 2 cm. and attached to the wall of the left atrium above the mitral valve. It acted in a ball-valve fashion at the mitral valve orifice. The tumor demonstrated the histologic characteristics of a myxoma.

Case No. 2. An 18-year-old housewife was admitted to the University Hospitals in January, 1956, with a history of progressive exertional dyspnea of only three months' duration. There was no history of rheumatic fever. Her menstrual history was consistent with an intrauterine pregnancy of two months' gestation, and that condition was confirmed by pelvic examination. Cardiac examination disclosed 3+ right ventricular overaccessibility, 2+ left ventricular overaccessibility, and accentuation of mitral and pulmonic valve closure. There was a grade III holosystolic murmur at the apex, a presystolic thrill and murmur medial to the apex, and an opening snap of the mitral valve. X-ray examination of the heart revealed 2+ right ventricular hypertrophy, 1+ left ventricular hypertrophy and 3+ left atrial enlargement. The electrocardiogram was interpreted as showing right ventricular hypertrophy, with P-wave abnormality suggesting atrial disease. The clinical diagnosis was rheumatic heart disease with mitral stenosis and insufficiency. At the time of operation a spherical tumor measuring 3.5 cm. in diameter was found within the left atrium, arising from the septum and producing incompetence of the aortic leaflet of the mitral valve during systole and occlusion of the mitral valve orifice during diastole (Figure 1). Attempted removal resulted in severe hemorrhage, cardiac-mechanism disturbance and death. Microscopically, this tumor was a classical fibromyxoma.

Case No. 3.⁹ A 31-year-old Negro housewife was admitted to the University Hospitals in July, 1951, with the symptoms and signs of sudden occlusion of the aortic bifurcation, necessitating bilateral lower-extremity amputation. Hypertension appeared in 1954, and during work-up a diminished function of the left kidney with partial occlusion of the left renal artery was demonstrated. Finally, in 1956 she presented with left chest and arm pain, and examination revealed a mass in the left breast with extension to the axilla, which proved on biopsy to be adenocarcinoma. Cardiac examination disclosed moderate enlargement without other specific findings.

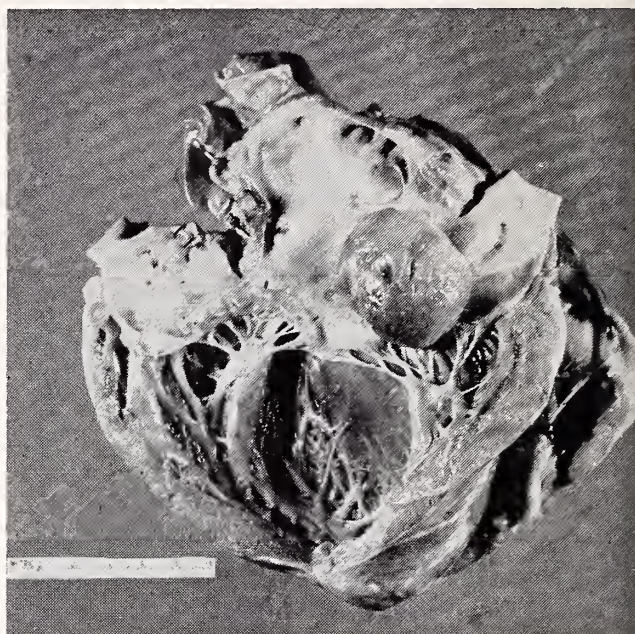


Figure 1. Myxoma of the left atrium in Case No. 2.

X-ray examination of the heart revealed a peculiar configuration, with prominence of the left mid-cardiac border below the pulmonary artery. An electrocardiogram in 1954 was normal, but one made in 1956 revealed diminished R-wave amplitudes and widespread, nonspecific T-wave changes that were thought to be compatible with pericardial and/or epicardial metastases (Figure 2). The patient's hospital course was characterized by increasing respiratory distress and disorientation, and death occurred on July 8, 1956.

The clinical diagnosis in 1951 was aortic occlusion of unknown etiology, and in 1956 it was adenocarcinoma of the left breast with pulmonary, cardiac and cerebral metastases. Postmortem examination revealed partial replacement of the heart by a tumor which was primarily apical in location, with upward invasion and replacement of portions of the interventricular septum and both ventricular walls. The heart, together with the pericardial sac and the tumor, weighed 1,950 Gm., or about six to eight times normal. There was occlusion of the lower abdominal aorta and left renal artery as a result of embolism from the left ventricle. In addition, there were old and recent infarctions in the spleen, right kidney, both lungs and right occipital lobe of the brain, which probably had also been caused by emboli originating within the heart. Microscopically, this tumor was classified as lipomyxosarcoma.

Case No. 4.¹⁰ A 21-year-old farmer was admitted to the University Hospitals in October, 1960. For six months he had noted increasing shortness of breath and cough with hemoptysis. He appeared healthy, though he showed signs of an extensive left pleural effusion. Cardiac examination disclosed right ventricular overaccessibility, accentuation of

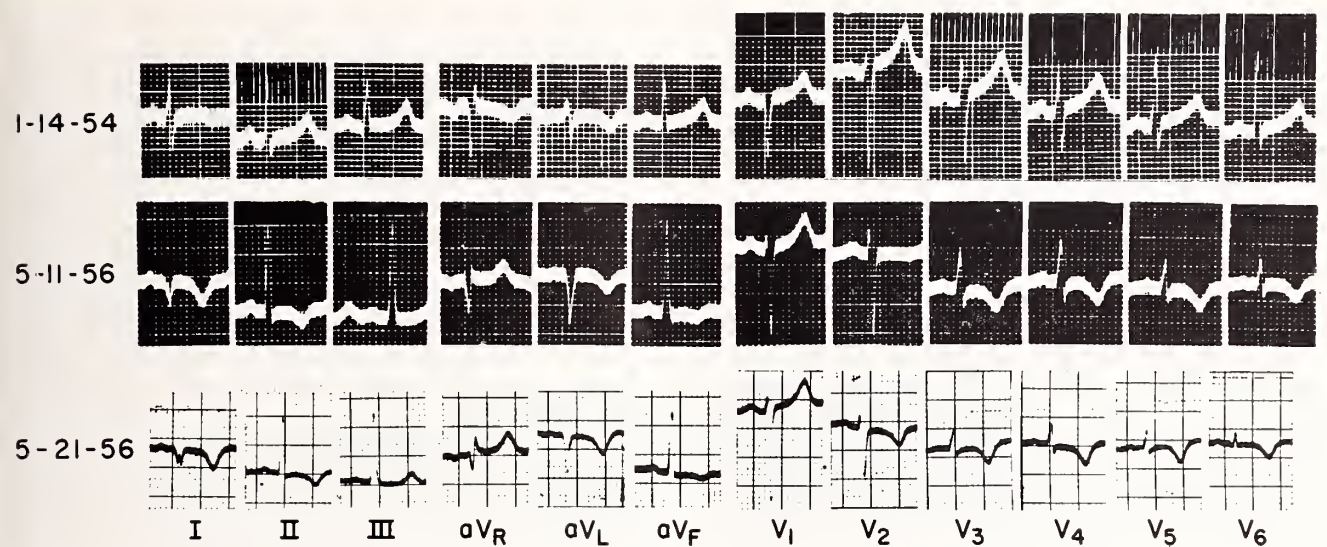


Figure 2. Serial electrocardiograms from Case No. 3. Note the diminished R-wave amplitudes and the widespread T-wave abnormality in 1956.

mitral and pulmonic valve closure, a grade II to III coarse, medium-pitched diastolic murmur low along the left sternal border, and a blowing systolic murmur with a diastolic rumble at the apex. X-ray examination confirmed the pleural effusion on the left, and the contour of the heart suggested the possibility of mitral valvular disease. An electrocardiogram showed ST-segment and T-wave abnormalities suggesting myocardial disease. Cardiac catheterization demonstrated elevated right ventricular, pulmonary artery and pulmonary wedge pressures. The clinical diagnosis was rheumatic heart disease with mitral-valve involvement. The possibility of primary pleural, pericardial or cardiac tumor was considered.

Operation revealed a left-atrial tumor which was adherent to the wall of the septum and posterior commissure, with implants present on the sub-endocardial surface of the atrium. There was extension into the pulmonary veins. Complete removal would have necessitated excision of a portion of the inter-atrial septum and mural leaflet of the mitral valve, and for this reason some tumor was left behind. Microscopically, this tumor was malignant and was classified as an angiosarcoma. The patient's course following the operation was one of progressive deterioration, with extension of tumor to lung and pleura. There were metastases to the liver. Death occurred on January 4, 1962.

Case No. 5. A 37-year-old housewife was seen in the Medical Out-Clinic in January, 1961, with the complaint of abdominal pain of three months' duration. Her later course was marked by embolic occlusion of the right brachial artery, and finally a right hemiparesis with aphasia resulted in her admission to the hospital.

Her past history was significant in that a nevus of the shoulder had been cauterized in July, 1958, and when it recurred in December, 1958, it had been excised. The pathologic diagnosis was malig-

nant melanoma, and wide excision followed by chemotherapy with THIOTEPA was done in January, 1959.

Physical examination at the time of admission confirmed the brachial-artery occlusion, and in addition revealed a grade II blowing systolic murmur along the low left sternal border and at the apex. There was a prominent third sound in early diastole at the apex. X-ray examination of the heart was normal. Her electrocardiogram was normal initially, but later revealed an incomplete right bundle branch block. The clinical diagnosis in this instance was multiple emboli of unknown origin, and the possibility of malignant melanoma was strongly considered.

Postmortem examination revealed a tumor arising from the under surface of the posterior leaflet of the mitral valve. This tumor arose entirely from the leaflet and showed a free margin of leaflet at the annular ring separating it from the myocardium. Portions of the growth extended through the valve into the atrium and partially occluded the lumen. Tumor also extended into the ventricle in and around the papillary muscles and chorda tendineae. Microscopic examination did not reveal melanin in the tissue. There was no blood-vessel invasion. The final diagnosis was anaplastic sarcoma of the mitral valve, with tumor emboli to the left brachial, left internal carotid, splenic and superior mesenteric arteries.

Case No. 6. A 51-year-old housewife was admitted to the University Hospitals in April, 1962. She complained of having had severe fatigue and swelling of the legs and abdomen for several years, with an increase in severity during the three months prior to admission. She appeared pale and chronically ill, with pronounced neck-vein distention, hepatomegaly with ascites, and edema of the extremities. She was able to lie flat in bed without noticeable distress. Cardiac examination disclosed

grade II to III blowing systolic and diastolic murmurs low along the left sternal border. These were interpreted by many observers as indicating a pericardial friction rub, but careful auscultation revealed a very definite increase in both murmurs during inspiration. X-ray examination revealed a heart which was unremarkable in configuration or specific chamber enlargement. The electrocardiogram was interpreted as showing widespread non-specific ST-segment and T-wave abnormalities. Cardiac catheterization demonstrated marked elevation of right atrial pressure and normal right ventricular and pulmonary artery pressures, resulting in a gradient of 12.0 mm. Hg between the right ventricle and the right atrium in early diastole, and 12.5 mm. Hg in end-diastole (Figure 3). An angiocardigram demonstrated a constant irregular filling defect in the right atrium, and delay in the passage of dye from the right atrium into the right ventricle (Figure 4). Exploration, with cardiopulmonary bypass, revealed a tumor arising within the right atrium and extending through the tricuspid valve orifice into the right ventricle and out into the outflow tract of the ventricle.

The tumor was removed successfully, and microscopically was classified as a myxoma.

DISCUSSION

These cases exemplify the protean manifestations of intracardiac tumors. Each case had certain features which troubled the clinician at the time, and which in retrospect would make one strongly consider the diagnosis of primary intracardiac tumor.

The left-sided tumors most often masquerade as mitral stenosis, for the patients present with progressive dyspnea, orthopnea and occasionally substernal pain. Physical examination usually reveals right ventricular overaccessibility, accen-

tuation of the mitral and pulmonic valve-closure sounds, an apical presystolic thrill and murmur, and in rare instances, mitral opening snaps. The symptoms and signs can be explained on the basis of the mobile intra-atrial mass's acting in a ball-valve fashion at the mitral valve orifice. This mechanical factor may provide the two most helpful clues to the diagnosis, namely, variation in symptoms and signs with change of position, and syncope episodes that may also be related to the patient's assuming sitting or standing positions. It is interesting that over 370 instances of left-atrial tumor or thrombi have been mistaken for mitral stenosis.

Acute arterial occlusion is the other major presenting manifestation of left-sided tumors, as illustrated by Case No. 3 and Case No. 5. It is estimated that more than 90 per cent of arterial emboli are cardiac in origin,¹¹ and that mural thrombosis associated with myocardial infarction and chronic rheumatic heart disease account for 50 and 40 per cent, respectively.¹² Intracardiac tumor must therefore be considered as a rare but definite cause of acute arterial occlusion. It is worth mentioning that a case has been reported of myxoma of the right atrium with a patent foramen ovale resulting in right-to-left shunt,¹³ and thus that paradoxical embolization is within the realm of possibility.

Right-sided tumors most often are misdiagnosed as constrictive pericarditis or tricuspid stenosis, presenting as did Case No. 6 with marked weakness, weight loss and swelling of the abdomen, ankles and feet. The appearance of a patient who has marked neck-vein distention, hepatomegaly with ascites, and extremity edema, and who is able to lie perfectly flat in bed must alert one to the possibility of right-atrial tumor. Again, the presence of a semimobile mass within the right atrium may produce variations of symptoms and signs

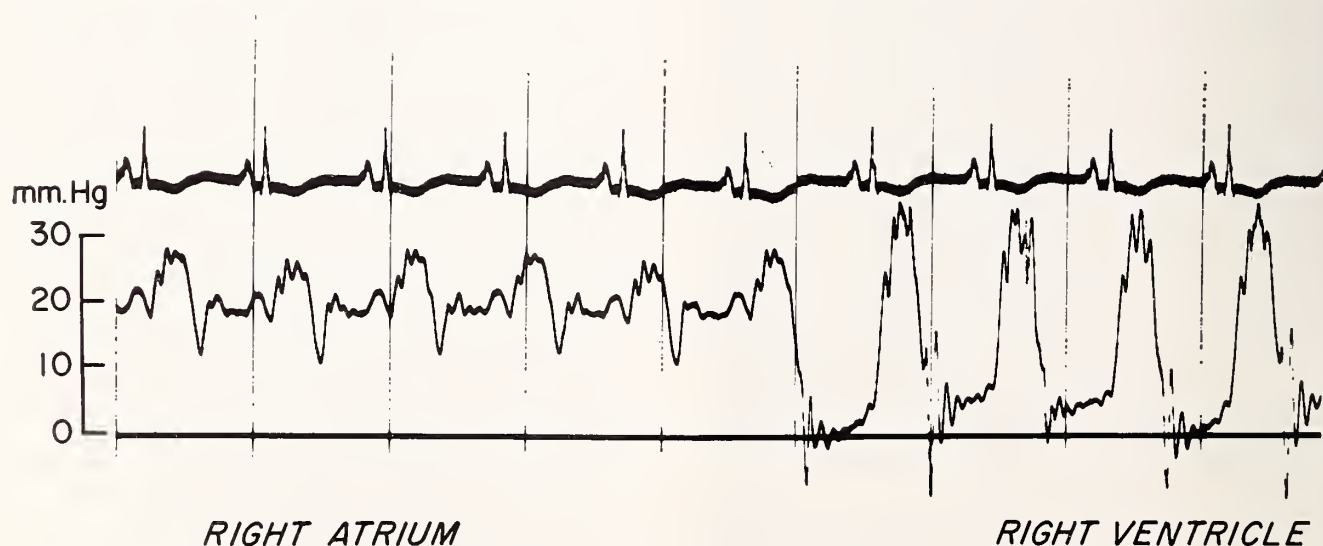


Figure 3. Right-atrial and right-ventricular pressure tracings from Case No. 6, placed side by side. Note the marked diastolic pressure gradient between atrium and ventricle.

with position change, and more importantly, careful auscultation may give the clue to the diagnosis if a definite inspiratory increase in the murmurs can be demonstrated.

Other manifestations include fever and an elevated sedimentation rate mimicking bacterial endocarditis. However, multiple blood cultures are negative, as in Case No. 1. A less common but perplexing finding is gangrene of the nose and toes. This is related to sudden decreases in cardiac output, with resultant intense peripheral arteriolar and probably venular constriction. A recently reported case¹⁴ presented with polycythemia and an elevated platelet count, and was initially diagnosed as polycythemia vera. The correct diagnosis was later established, the blood picture returned to normal following removal of the tumor, and thus another neoplasm was added to the lengthy list of conditions known to produce polycythemia. Flushing may be noted with these tumors, and may result in an initial impression of carcinoid syndrome.

Thus the differential diagnosis resolves into a discussion of diseases which are usually diagnosed when a true primary intracardiac tumor presents.

Routine roentgenograms yield no diagnostic

findings in the presence of intracavitary cardiac lesions. An unusual or irregular cardiac shadow, however, should alert the physician to this possibility. Left-atrial myxomas result in findings similar to those of rheumatic mitral valvular disease, with left-atrial enlargement, hypertrophy of the main pulmonary artery segment, hypertensive changes of the pulmonary veins and arteries, and right ventricular hypertrophy. Right-atrial myxomas may simulate tricuspid valvular disease with right-atrial and ventricular enlargement. The rarity of isolated tricuspid valvular disease, however, should arouse suspicion of tumor.

Serial electrocardiographic changes, correlated with the clinical and roentgenologic findings, help to substantiate the diagnosis of an intracavitary cardiac lesion. With progressive obstruction to the right side of the circulation, the P waves become tall as a result of right-atrial enlargement, the voltage of the R waves decreases because of impaired myocardial function, and right bundle branch block usually occurs. Tumors of the left side of the heart produce broad, notched P waves suggestive of mitral stenosis, and as pulmonary hypertension develops, the electrical axis shifts to the right, and frank right-ventricular hypertrophy appears. Widespread ST-segment and T-wave changes are also often associated with both right- and left-sided tumors.

Cardiac catheterization may be helpful, particularly in right-sided tumors. A significant pressure differential between the right atrium and ventricle during diastole is noted only with obstruction at the tricuspid valve orifice. This is an important point of differentiation between constrictive pericarditis and tricuspid valvular obstruction, and is illustrated in the tracing from Case No. 6 (Figure 3). The high pressure in the right atrium at catheterization may also raise the question of Ebstein's anomaly.

Angiocardiography is the most important diagnostic procedure for the identification of intracavitary cardiac tumors. Chamber filling defects are clearly outlined and are often diagnostic of tumor, as illustrated by the angiocardiogram from Case No. 6 (Figure 4).

SUMMARY

Six patients with primary tumors of the heart have been reviewed. The clinical manifestations included symptoms and signs compatible with mitral valvular disease, tricuspid valvular disease, constrictive pericarditis, bacterial endocarditis and acute arterial occlusion. Routine roentgenograms and electrocardiograms are not diagnostic, and only cardiac catheterization and angiocardiography will facilitate accurate preoperative diagnoses. Finally, it is important that this diagnosis be established, for operation with the cardiopulmonary bypass offers us an excellent chance to cure this condition.



Figure 4. Angiocardiogram from Case No. 6 showing an irregular filling defect within the right atrium with an extension through the tricuspid orifice into the right ventricle.

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Neonatal Hepatitis

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JAUNDICE APPEARING after the third day of life and persisting for a week or more may be due to any one of the following conditions: (1) congenital atresia of the bile ducts, (2) idiopathic dilatation of the common bile duct, (3) toxoplasmosis, (4) cytomegalic inclusion disease, (5) galactosemia, (6) inspissated bile syndrome, (7) septicemia, (8) congenital syphilis, (9) congenital spherocytosis, (10) herpetic hepatitis, (11) acquired hemolytic anemias, (12) prematurity, and (13) neonatal hepatitis.

It is the purpose of this paper to review present knowledge concerning "neonatal hepatitis," and to present a case presumably illustrative of the late sequelae of that disease. Ruebner¹ says "About 85 per cent of jaundiced infants . . . suffer from either congenital obliteration of the extrahepatic bile ducts or from a parenchymal liver disease

with a normally patent biliary tree. The latter condition is of uncertain etiology and many names have been applied to it. The one most commonly used is neonatal hepatitis."

CASE REPORT

A 14 $\frac{3}{4}$ -year-old white female was admitted to the pediatric service of the University Hospitals on February 2, 1962, because of hematemesis which had occurred seven days before admission.

The patient was the product of a normal pregnancy and weighed 6 lbs. 8 oz. at birth. There is evidence that the patient had respiratory difficulties with cyanosis during the immediate neonatal period and was placed in an incubator for several days after birth. She is reported to have been jaundiced either at birth or in the next few days, and to have remained so during the first four weeks of life. Her growth was slower than normal throughout her first three years. She had frequent upper-respiratory infections during that period. When she was three years old, a one-week episode of bright red, bloody stools occurred, but the condition cleared without treatment. She grew satisfactorily from the age of three years to the time of her admission. The patient experienced a severe episode of epistaxis one or two years prior to admission, and it was treated with nasal packing and Phenylephrine. For two years prior to admission she had recurrent epigastric pain, postprandially, and it was relieved by antacids and milk. A diagnosis of diabetes mellitus was made

Dr. Conn, a 1963 graduate of the S.U.I. College of Medicine, made the investigation on which this article is based while he was a junior and a senior student at that school. The paper was prepared with the advice and assistance of Dr. Robert D. Gauchat, an associate professor of pediatrics there. Dr. Conn wishes to thank him for his advice, and especially for the encouragement which he gave him in pursuing the subject in depth. Dr. Donal Dunphy, professor and head of the Department of Pediatrics, reviewed the paper and offered suggestions.

six months prior to admission, on the basis of a history of polydipsia, polyuria, a 20 lb. weight loss, glucosuria, and hyperglycemia. She was treated with 70 units of N.P.H. insulin per day, taken before breakfast.

Seven days before admission, the patient awoke at 3 a.m. and vomited a large amount of bright red unclotted blood. She was taken to a local hospital, and while there she had three additional episodes of hematemesis. Five units of whole blood were required to stabilize her condition. An upper-gastrointestinal series is said to have revealed a duodenal ulcer. No esophageal varices were visualized.

On her arrival at University Hospitals, the patient gave no additional history of bloody or tarry stools, food intolerances or other gastrointestinal complaints. Her mother denied ever having been jaundiced, and there is no family history of blood group incompatibility. The patient has two sisters and one brother in good health. A brother died at 1½ days of age. A paternal uncle has diabetes mellitus, and a maternal grandmother and two maternal aunts have peptic ulcers.

Physical examination on admission revealed a healthy-looking adolescent female in no acute distress. The patient's height and weight were above the fiftieth percentile levels for her age. Her breasts were budding, and she had moderate amounts of pubic and axillary hair. She had not yet experienced the menarche. She was afebrile. Her blood pressure was 130/76 mm. Hg, and her pulse rate was 68 per minute and regular. The submaxillary glands were bilaterally enlarged and firm. The liver was not palpable. The spleen was enlarged, firm, slightly irregular in outline, and palpable 10-12 cm. below the left costal margin. The remainder of her physical examination was not remarkable.

Laboratory studies revealed a hemoglobin concentration of 12.7 Gm. per cent, a hematocrit of 40 vol. per cent, a reticulocyte count of 0.9 per cent, and a white blood cell count of 2,750 per cubic millimeter, with a normal differential count and 45,000 platelets. Urinalysis revealed 4+ glucosuria and no acetonuria, and the fasting blood sugar was 300 mg. per cent. A diabetic type of response was obtained to an oral glucose tolerance test. Gastric analysis showed normal values of free acid in the stomach. An upper-gastrointestinal series and esophagram revealed esophageal varices, but no evidence of duodenal ulcer. The blood urea nitrogen concentration was 13.0 mg. per cent, and the creatinine concentration was 0.7 mg. per cent. The albumin/globulin ratio was 3.8/4.2 Gm. per cent, the alkaline phosphatase was 2.2 Bodansky units, the serum glutamic oxaloacetic transaminase was 16 units, a cephalin flocculation test was 2+ in 24 hours and 4+ in 48 hours, the thymol turbidity was 3 units, and a Bromsulfalein test showed 2 per cent retention in 45 minutes. Bili-

rubin determinations revealed a one-minute value of 0.1 and a total value of 1.0 mg. per cent. The prothrombin time was 17.5 minutes, with a control of 13.5 minutes. Sweat chlorides were normal, as were intravenous pyelograms and an electroencephalogram. A bone marrow aspirate showed normal marrow tissue with a suggestion of slight erythroid hyperplasia.

On the basis of the patient's clinical findings, clinical diagnoses of hepatic cirrhosis, hypersplenism, portal hypertension, esophageal varices, and diabetes mellitus were made. An attempt was made to control the patient's diabetes mellitus and to correct her prothrombin time. On the thirty-third hospital day a splenoportogram revealed a dilated, enlarged and tortuous splenic vein. The portal vein did not fill with dye. On the thirty-fifth hospital day the patient was taken to the operating room, where splenectomy, a splenorenal shunt and a liver biopsy were performed. The pre-operative portal pressure was 34 cm. of water, and postoperatively it was 19 cm. of water.

The postoperative course was uncomplicated, and the patient was discharged from the hospital on the forty-eighth hospital day with a 2,700 calorie diet and a regiment of regular and N.P.H. insulin for the control of her diabetes mellitus.

Pathologic examination of specimens obtained at surgery revealed a spleen that weighed 1,050 Gm. and appeared normal on gross inspection. It had a smooth capsule, and the cut surface revealed normal splenic architecture. Prominent Malpighian corpuscles were seen, and there was congestion of the vascular system. Microscopically, focal perivascular hemorrhages were present, and the trabeculae were quite prominent, with an increased fibrosis in some perivascular areas. Many of the sinusoids were empty, but others were congested with erythrocytes.

The liver biopsy revealed a wedge of firm, pale, yellow-tan tissue which was grossly nodular in character. Microscopically, the liver showed greatly increased fibrous connective tissue in the region of the portal triads, with lymphocytic infiltration of that area. The liver sinusoids did not appear dilated, and no bile stasis was present. Post-hepatic cirrhosis was the pathologic diagnosis.

The patient returned six weeks after discharge for follow-up studies. At that time, she complained that right costo-vertebral angle, right flank, and right lower quadrant pain had been intermittently present for two weeks. She had experienced several episodes of emesis since leaving the hospital, but no hematemesis. She had had no insulin reactions, but consistently had had 3+ to 4+ glucosuria. She denied acetonuria. Her insulin requirement had been increasing steadily, and she had gained 15 pounds. Urine culture revealed *E. coli* sensitive to Furadantin. She was placed on a reduced caloric diet, and Furadantin 100 mg. t.i.d. for 14 days was prescribed. Three further return visits, at two-

month intervals, revealed that the patient's diabetes still had not been well controlled. She had one episode of acidosis requiring hospitalization, and she also was hospitalized for one week with an attack of gastroenteritis. When last seen, nine months postoperatively, her primary problem was one of poor control of diabetes mellitus.

DISCUSSION

It may seem inappropriate to present the case history of a 14-year-old adolescent female in a paper concerning neonatal hepatitis, but it seems probable that this patient represents the long-term effects of that entity.

Although there is no proof that the patient was a victim of neonatal hepatitis, the history of jaundice, present at birth and lasting four weeks, is suggestive of such a diagnosis. There is no evidence to suggest that blood-group incompatibility or an infectious bacterial process was responsible for her jaundice. Congenital or developmental hepato-biliary anomalies as the etiology of her jaundice were ruled out by exploratory laparotomy during her stay in the hospital.

Her reported cyanosis at birth could have resulted in hepatic damage due to hypoxia, and therefore could have been responsible for her jaundice. We were unable to exclude this possibility.

In the final analysis, we have presupposed that neonatal hepatitis was responsible for the patient's episode of jaundice. We acknowledge the fact that the patient's early history, as reported by her mother, is not completely reliable, but for the present purpose we have accepted it at face value.

Her subsequent course probably represents two different pathologic processes at work, namely: (1) diabetes mellitus, and (2) hepatic cirrhosis secondary to neonatal hepatitis. At the time of her initial admission to the University Hospitals, cirrhosis had advanced to such a degree as to produce portal hypertension, splenomegaly and esophageal varices. Her history of diabetes mellitus, epigastric pain and duodenal ulcer are probably unrelated to her cirrhosis. The difficulty encountered in controlling her diabetes can be accounted for, at least in part, by a severely damaged liver unable to store and metabolize the products of carbohydrate metabolism properly. The patient also represents the brittle juvenile form of diabetes which is notoriously refractory.

As will be pointed out in the ensuing discussion of the literature, the natural history of neonatal hepatitis is usually brief, terminating fatally within a period ranging in length from a few months to several years after inception of the disease. No explanation for the longer survival of this patient has been discovered, but we believe that this single fact is not enough to invalidate our assumption that her case represents one point in the pathologic continuum of neonatal hepatitis. Indeed,

the significance of reporting this case lies in the fact that our patient survived her initial episode of hepatitis and lived to demonstrate the devastating long-term after-effects of the disease.

LITERATURE REVIEW

In 1937, Braid and Ebbs² published a report on a Caucasian female who died at 3½ years of age with a history of acholic stools, hepatosplenomegaly and an increased concentration of bilirubin in the blood. They correlated their study with that of Lightwood, who had previously made a study of what he called "icterus gravis neonatorum." Lightwood's series of nine patients included seven children more than five weeks of age who showed evidence of hepatic fibrosis. This was most conspicuous in the portal areas, but was also present intercellularly. Braid postulated that these cases of neonatal icterus might have been due to a congenital developmental defect, perhaps related to hepato-lenticular degeneration. He was unable, however, to find any central nervous system or skeletal lesions in his own case. In 1943, Lightwood first demonstrated findings consistent with icterus gravis neonatorum in three patients with biliary obstruction.

In 1951, Stokes and Wolman³ reviewed the literature on neonatal hepatitis and reported an additional group of 12 patients, all of whom had developed jaundice at birth. It was their impression that clinical data gathered from their group and from other ones gave strong support to the thesis that viral hepatitis, whether caused by the infectious-hepatitis or by the serum-hepatitis strain, could be transplacental in origin. The infectious-hepatitis virus is present in the blood only during its two- to six-week incubation period. The newborn child therefore will not be affected unless the mother is ill with the virus at or near term. Presumably, maternal antibodies would cross the placenta and protect the fetus if the mother contracted the disease earlier during her pregnancy. In one of the cases in their study, Stokes and Wolman were able to transmit the virus from both mother and affected child to human volunteers. They identified this as the virus of homologous serum hepatitis. The virus responsible for homologous serum hepatitis has an incubation period of 60 to 150 days. The appearance of jaundice at birth or soon afterward would coincide with the transplacental transmission of this virus some time in the second or third trimesters of pregnancy.

Several other investigators⁴⁻⁶ have also presented evidence for the transplacental transmission of a virus similar to, if not identical with, that of homologous serum hepatitis as a causative agent in neonatal hepatitis. These same investigators have reported an average survival of less than two years after infection, in these patients. Neonatal hepatitis has been reported in siblings,⁴⁻⁶ and an icterogenic virus has been isolated from the

mother of one of the family groups of affected children.

The pathologic anatomy of neonatal hepatitis has gradually been clarified since Lightwood's original studies in the mid-nineteen thirties. Craig, Gellis, and Hsia,⁷ in 1955, reported the following pathologic findings upon postmortem examination of nine infants who died of neonatal hepatitis: "All the livers weighed 1.1 to 1.5 times normal, perhaps due to the rapid course of the disease terminating in death in all cases before the age of 4½ years. All cases displayed an increased prominence of the lobular pattern, and the liver cell cords were badly distorted. Regenerating nodules were not prominent except in the two older children. With increasing age, there seems to be an increase in periportal scarring." They believe that cirrhosis of the liver commonly occurs following neonatal hepatitis.

In 1959, Shorter and colleagues,⁸ at the Mayo Clinic, reviewed the seven cases of neonatal hepatitis seen there between 1924 and 1957. All their patients had been jaundiced during the first month of life, and six of the seven patients had acholic stools and hepatomegaly. Histologic examination of tissue from these patients revealed that the portal tracts were infiltrated with inflammatory cells, predominantly of the mononuclear type. There was proliferation of the fibrous connective tissue in the portal tracts and in the adjacent parenchymal tissue. Almost universally there was eosinophilic degeneration of the hepatic parenchymal cells. Their most obvious and impressive finding was the occurrence of giant cells. These were multinucleated, the average number of nuclei was nine, and the cells were two to six times as large as normal. Other reports of this finding^{9, 10} have appeared in the literature. Craig,¹¹ commenting on the occurrence of these giant cells in infantile hepatitis, feels that they are limited to affected children less than two or three years of age. There is, as yet, no explanation for the fact that they do not appear when older children develop hepatitis, but Shorter and co-workers feel that they may represent the exaggerated power of the regenerative response of the infant liver.

Foci of hematopoiesis in extramedullary tissues, notably in the liver and spleen, were reported by Ruebner,¹ in 1960, as occurring in neonatal hepatitis. He compared his findings in four cases of neonatal hepatitis with those thought to be characteristic of biliary atresia, and drew the following conclusions. Although prominent giant cells have been thought to suggest neonatal hepatitis, they have been found in as many as one-third of patients with biliary atresia. The duct-like arrangement of the liver cells is much more common in neonatal hepatitis than in biliary atresia. The presence of extramedullary hematopoiesis in the liver seems to be highly suggestive of neonatal hepatitis, especially if blood-group incompatibility

can be excluded. He concluded: "The histologic pattern of neonatal hepatitis differs from that of infectious hepatitis in the adult in certain respects. Until the virus or viruses of neonatal hepatitis can conclusively be demonstrated, uncertainty as to whether this variation is due to differences in etiologic agents or merely to the difference in the affected age groups must remain."

An interesting aspect of neonatal hepatitis, presented by Hsia, Boggs, and co-workers¹² and based upon examination of 120 patients from 39 families, is that the incidence of this condition is consistent with an autosomal recessive type of genetic inheritance, but these workers could not exclude extra-genetic factors.

Many laboratory determinations have been employed in an attempt to establish differential diagnostic criteria for jaundice in neonates and children. Kove *et al.*¹³ in 1957, made a two-part study on serum glutamic oxaloacetic transaminase (SGOT) and serum glutamic pyruvic transaminase (SGPT) in an effort to use these two determinations as an aid in the diagnosis of various etiologies of jaundice in the newborn period. It has been known for some years that an increase in the activity of SGOT is demonstrable in the serums of patients with acute hepatic parenchymal injury. Kove and his associates¹³ determined that the normal level of SGOT in infants is less than 120 units. Except for somewhat lesser activity in cord blood, neither the age of the infant nor the degree of hyperbilirubinemia appeared to influence the activity of SGOT.

In studying the activity of SGPT, these investigators found that the alteration of activity of this enzyme reflects the presence of acute hepatocellular injury to a greater degree than does SGOT, and that in contrast to SGOT, SGPT does not rise in the presence of acute cardiac injury. SGPT has a normal value of less than 90 units in the infant, and this level is not affected by hyperbilirubinemia. They found that SGPT is more stable than SGOT, and therefore that smaller rises of SGPT are significant in the diagnosis of acute hepatocellular injury.

They concluded from their preliminary studies that neonatal biliary obstruction is characterized by increases of SGOT and SGPT in the serum, but that levels greater than 300 to 500 units are diagnostic of neonatal hepatitis, and that levels below this are indicative of an obstructive lesion. Even in severe hemolytic states, the SGPT remains less than 90 units. They feel that SGPT determinations are therefore a useful guide in determining whether neonatal jaundice is due to parenchymal disease or to an obstructive lesion.

The most recent attempts at a laboratory determination as a positive means of differentiating neonatal hepatitis from biliary atresia center around the study by Rutenberg *et al.*¹⁴ of the enzyme serum leucine aminopeptidase (SLAP). Nor-

mal values for SLAP in venous or capillary blood were established as being 100-280 units in infants one to five days old, and 85-255 units for infants six to 60 days old. These values, they found, are unrelated to birth weight or sex, and are not altered by mild to moderate hemolytic states. They consider levels of SLAP greater than 500 units as being diagnostic of biliary atresia. Eighteen infants with hemolytic disease or physiologic jaundice were tested, and all had SLAP values within the normal range. Twenty-one infants of ages ranging from one to nine months were studied after a diagnosis of biliary atresia had been made. Nineteen of the 21 had SLAP values greater than 500 units preoperatively, and two had values less than 500 but greater than 255 units. Serial SLAP determinations were made in six infants postoperatively, and they consistently showed levels greater than 500 units for up to 10 weeks after surgery. Five cases of neonatal hepatitis were found at operation, and all these cases had had preoperative SLAP values of less than 500 units. The authors conclude: "Preliminary observations . . . indicate that the SLAP test appears to be of aid in differentiating biliary atresia from neonatal hepatitis." They stress the fact that serial determinations were not necessary for diagnosis. They also noted that two of their 21 patients with biliary atresia had SLAP levels that were not diagnostic of this condition, and for that reason they directed that if other indications exist for operation, the infant should be explored even if the SLAP level is less than 500 units.

In 1960, Silverberg and associates¹⁵ compared 260 cases of extrahepatic biliary obstruction with 38 cases of neonatal hepatitis. They concluded that the two diseases can coexist, and that microscopic examination alone cannot be employed to rule out atresia of the hepatic ducts. They went on to say that tests for urobilinogen in urine and stools, bile in duodenal aspirates, and serial bilirubin determinations are of little assistance. To this list we may add various flocculation tests, and alkaline phosphatase and serum cholesterol determinations. In reviewing Kove's work on SGPT and SGOT, Silverberg *et al.* found the overlap of values in hepatitis and biliary atresia was so frequent and persistent as to nullify any diagnostic value of these two transaminases in this differentiation.

This group of investigators offered the following recommendations: (1) Every attempt should be made to differentiate between the various diseases which can produce prolonged jaundice in early infancy, preferably by the fourth week of life and certainly before the age of eight weeks. (2) In the event that the final differentiation is between neonatal hepatitis and congenital atresia of the bile ducts, an initial open biopsy should be obtained. (3) Immediately afterward, the gallbladder and its contents should be identified, and an operative cholangiogram performed. (4) If the gallbladder

cannot be found, or if the cholangiogram fails to demonstrate normal extrahepatic ducts, an extensive exploration is justified. (5) If a normal duct system is demonstrated, then the procedure should be terminated and the abdomen closed.

The incidence of neonatal hepatitis as a cause of neonatal jaundice varies from 16 to 25 per cent in various series. Approximately 70 per cent of affected infants will recover without any residual damage; 20 per cent will die of the acute disease; and 10 per cent will eventually develop hepatic cirrhosis. As in the case presented, the latter of these may occur many years after the initial appearance of the disease.

In addition to neonatal hepatitis, children from infancy onward are subject to various insults to the liver which also can result in long-term hepatic damage. Craig *et al.*¹⁶ have listed these other etiologic groups that can produce juvenile liver damage:

1. Infections
2. Nutritional difficulties
3. Toxins
4. Cardiac cirrhosis
5. Glycogen storage disease
6. Transfusional hemosiderosis

Ruggieri, Baggenstoss, and Logan¹⁷ reviewed 27 cases of juvenile cirrhosis seen at the Mayo Clinic, all of which had pathologic verification. The families of eight of the patients had a total of 11 known additional instances of liver disease, and in six of these 11 cases the patient had cirrhosis of the liver. Over 60 per cent of the patients had histories suggestive of an attack of hepatitis, and 78 per cent had been jaundiced at some time during their lives. Twenty-three of the 27 patients had died of cirrhosis, and 18 of these had died within two years or less after the onset of their first symptoms. This study points out the strikingly devastating effects of hepatic parenchymal disease in the juvenile liver, with its subsequent high mortality and frequent consequent cirrhosis, regardless of the etiologic agent responsible for the initial hepatic insult.

SUMMARY

The differential diagnosis of jaundice in infants and children presents a most difficult problem to the medical practitioner. Hepatitis is a cause of neonatal jaundice that is being recognized with increasing frequency. The case reported in this paper is an excellent illustration of the long-term effects of damage to the infant liver. The patient in question may well have had neonatal hepatitis, with resultant sequelae of hepatic cirrhosis, portal hypertension, congestive splenomegaly and esophageal varices, although there is no way to establish the diagnosis definitely at this time.

The literature concerned with neonatal hepatitis has been reviewed, and the available diagnostic measures have been discussed. At the present

time, there is no conclusive test that will establish the presence of neonatal hepatitis, but by following the method proposed by Silverberg and using the serum leucine aminopeptidase determination, we may soon be able to make this determination in many of the cases that at present are going undiagnosed.

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Physical Fitness and Bunion Derbies

Faintheartedly we raise our voice amid the clamorous cacophony to express a few thoughts about Physical Fitness and Fifty Mile Hikes. Upon another occasion . . . we have dilated upon the peculiar concept that more active "physical fitness" programs would decrease the number of rejections by the Armed Forces. We indicated that we saw no relationship between setting-up exercises wedged between classes on advanced flower arranging and long division and rejections by draft boards and induction-center examiners for the weird assortment of disorders which arouse them to feverish excitement—namely inguinal hernia, varicose veins, third degree flat foot, variocoele, absence of the right index finger, perforated ear drum and even bed-wetting. We know of no one rejected for soft muscles. We do not feel that the recent popularity of touch football, rocking chairs or swimming-pool immersion have appreciably changed the incidences of these disorders.

We fully concur that every Marine should be able to walk 50 miles at the drop of a hat. Our very security depends upon it. We are not sure that it applies to anyone else, except perhaps professional walkers. An early and famous proponent of this challenging concept of 50-mile hikes, and of physical fitness itself, was none other than the great Theodore Roosevelt. We intend no disrespect if we point out that he, himself, died prematurely.

Many years ago, when we were military men, we too had hikes. We well recall being hauled back to quarters from a ten-mile hike by ambulance because our feet gave out. We were then told that we couldn't have the privilege of serving overseas unless we completed a 25-mile hike. We took the challenge and sat it out. We were on the very next boat.

Seriously, graded exercise is probably good for all. Perhaps, as Dr. Paul Dudley White maintains, it may promote longevity. We feel, however, that there are many more important matters which should arouse our youthful and vigorous President to action—automobile fatalities, particularly in the young, the use of tobacco by teen-agers, and last, but perhaps most important, that curse of affluence, overeating.

—Editorial in the RHODE ISLAND MEDICAL JOURNAL, **46**:216, (April) 1963.

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 19-YEAR-OLD WHITE FEMALE, gravida I, para I, was admitted to the University Hospitals 11 months after having given a normal, spontaneous, vaginal delivery to an 8 lb. 14 oz. female infant. She had experienced nausea and vomiting throughout her pregnancy. Four months before delivery she had had an episode of hemoptysis, at which time a chest roentgenogram was interpreted as normal. Postpartum examination six weeks after delivery had been normal.

One month later she had a sudden onset of vaginal bleeding. "Pills" were given her, but the vaginal bleeding continued and she underwent a dilatation and curettage. On microscopic examination, the tissue removed was reported as showing chorionic villi, decidual reaction of endometrium and no evidence of malignancy. Because the bleeding continued, the patient was given intravenous Premarin and oral norethynodrel (Enovid).

During the following month, when this failed to stop the vaginal bleeding, the patient consulted another physician and was again hospitalized. Her uterus was found to be enlarged, and a pregnancy test was reported as positive. Dilatation and curettage were advised, but permission was refused by the hospital on the grounds of religious policy. Her physician therefore recommended that she see another doctor, and five months later she did. She had continued having daily vaginal bleeding. The third doctor found the uterus enlarged and softened. The pregnancy test was positive. Dilatation and curettage were performed, and showed a chorioepithelioma. Total abdominal hysterectomy and bilateral salpingo-oophorectomy followed. The patient's immediate convalescence was uneventful, and she was discharged home in one week, but she complained thereafter of episodes of nausea and vomiting, occurring daily and often several times a day. One month later she developed dyspnea with hemoptysis, and a chest roentgenogram was interpreted as showing metastatic pulmonary lesions.

On admission to the University Hospitals, her general physical examination was unremarkable except for a small amount of granulation tissue in

the apex of the vagina, and adjacent to it a bluish nodule covered by epithelium. On biopsy, the latter showed malignant neoplasm. The urine was normal both on chemical and on microscopic examination. The hemoglobin level was 11.7 Gm/100 ml., the hematocrit was 36 per cent, the white blood cell count was 8,900/cu. mm., the platelet count was 430,000/cu. mm., and the differential blood smear was normal. A chest roentgenogram revealed multiple well-circumscribed radiopaque densities varying in size from 1 to 3 mm. The blood urea nitrogen was 8 and the creatinine 0.7 mg. per cent, and the serum albumin was 3.8 and the globulin 3.5 Gm. per cent. The alkaline phosphatase was 3.6 units, the thymol turbidity 3.1 units and the total bilirubin 0.8 mg. per cent. The serum showed 1,000 chorionic gonadotrophin units per milliliter, and the urine showed over 900,000 units/24 hours.

The patient started the first course of amethopterin (Methotrexate) therapy shortly after admission, and it was planned to administer 25 mg. intramuscularly for 5 days, next allow a recovery period of several days, and then resume the Methotrexate. The only side effects of the drug were nausea and vomiting. Following completion of the second course of therapy, the patient developed severe ulcerations of the lower lip mucosa, and these recurred during the third and fourth courses of therapy. There were no complications noted following the fourth through eighth courses of therapy. The serum chorionic gonadotrophic units decreased to zero, and the urinary units dropped to fewer than 20 in 24 hours following the sixth course of Methotrexate therapy. During this time the blood count remained stable, and the white blood cell count never fell below 4,000/cu. mm. Some diminution took place in the size and number of metastatic pulmonary lesions.

At the time of the ninth course of therapy, the dosage of Methotrexate was doubled because of a rise to 20 chorionic gonadotrophin units in the serum, and to over 1,700 units in the urine. When the patient was given 50 mg. of Methotrexate for two days, she developed watery diarrhea, with nausea, vomiting and recurrence of the oral lesions, and the dosage was reduced to 37.5 mg.

Chlorambucil was also started and continued for four days. One month before death the serum chorionic gonadotrophins were 20-40 units/ml., and the urine showed 19,000 units in 24 hours. At that time Methotrexate was stopped, and intravenous actinomycin-D was instituted, 500 mcg. per day. The side effects were nausea, vomiting and malaise. Two weeks later the patient complained of numbness and weakness of the right arm and leg, and examination revealed muscle weakness and decreased sensation to pin prick. Skull and spine roentgenograms were interpreted as normal. A lumbar puncture revealed an opening pressure of 145 mm. H₂O, a 1+ Pandy, and a protein of 97 mg. per cent. The electroencephalogram was not regarded as showing any definite abnormality. Neurologic symptoms progressed, with foot drop and inability to move the right arm and leg. Twenty-four hours before death, the patient experienced a severe convulsion, following which she never regained consciousness, and her body temperature rose to 105° F. She expired approximately five months after Methotrexate therapy was first begun, and 14 months after delivery.

DISCUSSION

Dr. S. E. Ziffren, Surgery: Mr. Kammermeyer will present the discussion for the students.

Mr. John Kammermeyer, junior ward clerk: The patient experienced an episode of hemoptysis during her pregnancy. With hemoptysis, one should consider bronchial pulmonary disease and/or cardiovascular disease. However, there is nothing in the protocol to indicate that she suffered from any of the conditions included in these two categories, and when one considers her age he must regard these as highly unlikely. One interesting possibility is a minor pulmonary infarct secondary to hematologic dissemination of emboli of normal chorionic tissue into the lung. This has been reported in the literature as occurring in seemingly normal pregnancies.

Ten weeks after delivery, the patient had the onset of vaginal bleeding, which at first might be regarded as the onset of normal menstruation. However, the bleeding persisted, and dilatation and curettage were performed. When one is confronted with vaginal bleeding or menometrorrhagia, the following differential diagnosis should be considered. First, one should think of conditions intrinsic to the uterus, such as carcinoma of the cervix or the uterus, sarcoma, choriocarcinoma, or chorioadenoma destruens, and benign lesions such as benign mole, fibroids, endometrial or cervical polyps, cervical erosions, or endometriosis. The systemic conditions that are most likely are hypertension or a disorder of the hematopoietic system, including purpuras or leukemia. Also we should consider dysfunctional uterine bleeding or other endocrine imbalances.

In this case there is nothing to suggest systemic

disease, and therefore the most likely causes are local benign or malignant disease of the uterus or dysfunctional uterine bleeding. Following dilatation and curettage, the pathologist reported chorionic villi with decidual reaction of endometrium. These findings suggest either the unlikely possibility of trophoblastic tissue retained from the previous pregnancy, or a new pregnancy. The protocol does not state whether the villi were edematous, or whether or not any trophoblastic proliferation was present. In these conditions, hydatidiform mole should be considered. Hormonal treatment failed to stop the bleeding, a fact tending to indicate that hormonal imbalance was not at fault.

One month later, the uterus was enlarged and a pregnancy test was reported as positive. At this point one should consider pregnancy, a hydatidiform mole, or malignancy of the trophoblast as possible explanations for the clinical picture. A delay of five months ensued, after which dilatation and curettage were again performed, and showed choriocarcinoma. Abdominal hysterectomy and bilateral salpingo-oophorectomy were done, and postoperatively the patient had nausea and vomiting. We feel that this was probably due to the elevated chorionic gonadotrophin titer which was present at that time. One month later dyspnea and hemoptysis occurred, and metastatic pulmonary lesions were found.

Upon the patient's admission to S.U.I. Hospitals, a lesion was found upon vaginal examination which fits the description of metastatic choriocarcinoma grossly. The chorionic gonadotrophin level of both serum and urine were so greatly elevated as to be virtually diagnostic of choriocarcinoma, even without the previous pathologic confirmation. Methotrexate was administered, and the nausea, vomiting, and stomatitis which followed are its commonly-encountered side effects. For some time the patient improved, and then, as the chorionic gonadotrophin titer started to rise, chlorambucil and actinomycin-D were instituted as therapy. Shortly thereafter, progressive neurologic deficits developed. Since lung, brain, liver and bone are the four most likely sites of metastatic choriocarcinoma, it is logical to suppose that the symptoms were due to central nervous system metastases. Examination of the spinal fluid revealed an increase in protein consistent with malignant involvement of the central nervous system.

Prior to death, the patient underwent a convulsion, coma, and a rise in body temperature. These are best explained by central nervous system metastases which destroyed vital centers in the brain either by direct invasion or by necrosis and resultant intracranial hemorrhage. The fever might be explained as the result of metastatic involvement of the hypothalamic region or, less probably, as due to a terminal intercurrent bacterial or fungal infection such as cryptococcosis.

In order to rule in or out the possibility of a terminal infection, we should like to know whether the spinal fluid examination showed any increase in number of cells.

In summary then, my colleagues and I feel that the following is the most likely explanation of the patient's course. The episode of hemoptysis four months before term may have represented the onset of choriocarcinoma, or may have been an insignificant occurrence. Choriocarcinoma may develop in the course of a full-term pregnancy and remain dormant, so to speak, for months or years, even with an intervening normal pregnancy, before becoming fulminant in its course. Trophoblastic tissue may have been retained following the first pregnancy, but it is more likely that a second pregnancy occurred. Either a mole or a malignant mole then appeared and progressed to choriocarcinoma, or the choriocarcinoma arose directly. At first, the chemotherapeutic regimen produced regression of the metastases; but the patient finally succumbed to central nervous system metastases which, either directly or as a result of necrosis and intracranial hemorrhage, compromised and destroyed vital centers. The possibility of a terminal infection due to debilitation should be considered, but it is unlikely.

Dr. Ziffren: The spinal fluid was clear and there were no cells.

Dr. Jacobs will make a few remarks.

Dr. J. P. Jacobs, Obstetrics and Gynecology: I shall first ask *Dr. Van Epps* to show the roentgenograms on this patient.

Dr. Eugene P. Van Epps, Radiology: The first roentgenogram demonstrated multiple, discrete, nodular densities of varying sizes up to 3 cm. These were undoubtedly metastases.

Next we see the metastases again. Several were large and several were small.

Later roentgenograms revealed remarkable regression in the lesions, but nodules were still present. I suspect that many of them will have shown necrosis at the time of autopsy. Thus, we have a definite response of these metastatic lesions to the drug therapy given the patient. Total disappearance of the lesions did not occur.

Dr. Jacobs: Since this patient's difficulty was an apparent choriocarcinoma that was not cured, there is not much to say about the protocol. I should like, however, to discuss the lesions that usually develop with intensive Methotrexate therapy. Ulceration of the buccal mucosa is a very frequent complication in Methotrexate therapy, as it is also with actinomycin-D and certain other chemotherapeutic agents. From photos taken of the patient, one can see the ulceration on the lower lip, with raised margins in this area of involvement. These are quite painful, and significantly affect the patient's ability to eat and drink. They require good local care, they usually necessitate a liquid diet, and they regress rather rapidly be-

tween courses of therapy. Along with the possibility of leukopenia, this is one of the major reasons why we elect to allow several days, usually a week, between courses of therapy.

Dr. Ziffren: Do you have any questions you would like to direct to anyone?

Dr. Henry E. Hamilton, Internal Medicine: What per cent have spontaneous regression of tumors?

Dr. W. C. Keettel, Obstetrics and Gynecology: About 6 per cent have spontaneous regression.

Dr. D. S. Longnecker, Pathology: At autopsy this woman was found to have metastatic foci of choriocarcinoma in the pelvis, in a remnant of one of the broad ligaments, and in the lungs, liver, brain, adrenals, pancreas, thyroid, kidney, bone and small bowel. Members of our department had an opportunity to examine slides from the hysterectomy specimen and the two previous curettings, and found evidence of choriocarcinoma in all three. These materials included the tissue from the curettage which was performed 2½ months after delivery. I should like to quote from *Dr. Layton's* report on this specimen. He stated: "It is often difficult to assess the significance of these lesions with unusual degrees of trophoblastic proliferation, and to know whether one is dealing with a very cellular mole or with a choriocarcinoma. Because the slides under consideration display an unusual proliferation of trophoblastic elements with villus formation, I should tend to make a diagnosis of choriocarcinoma."

The metastasis found in the brain appeared originally to have involved the dura over the left cerebrum in the motor area. However, at the time of autopsy there was invasion of the brain for a distance of about 2 cm., and there was extensive hemorrhage in that portion of the cerebral hemisphere. This appears to have been the basis for the terminal neurologic signs. There was slight generalized cerebral edema, but there was no lesion in the brain stem. The tumor nodules in the lung were necrotic and appeared to contain no viable tumor. They measured up to 3 cm. in diameter. It was not clear whether this regression was the result of the natural course of the disease, or whether it was the result of the chemotherapy.

The bone marrow was of particular interest because of possible toxic depression by the chemotherapeutic agents. Foci of viable and necrotic tumor were found in the bone marrow both in vertebra and rib. In other foci there was well preserved marrow with mild myeloid hyperplasia, and thus there was no evidence of toxic effect on the marrow.

There was a well-developed patchy bronchopneumonia, but the amount of lung tissue involved was relatively small. One lung was of essentially normal weight, and the other was only moderately increased, so that death, apparently, was the result primarily of the cerebral metastasis and not of the pulmonary infection.

In summary, this woman developed choriocarcinoma of the uterus in connection with an apparently normal term pregnancy, and eventually died as a result of metastatic spread. I see no reason to assume that there was an intervening pregnancy episode, but I have no absolute basis on which to rule it out.

I want to review briefly the concept of tumors arising from the embryonic chorion—ones which might be referred to as tumors of pregnancy. On one hand we have the hydatidiform mole, which need not necessarily be regarded as a neoplasm. It is essentially a malformation or a degenerative change in the villus, involving swelling and trophoblastic proliferation. There are avascular villi. This proliferation of tissue is not really neoplastic, since it represents an alteration of chorionic villi, but it is commonly regarded as a neoplasm, and one cannot really disregard this point of view since there is no particular morphologic difference between an ordinary hydatidiform mole and the variant which is referred to as chorioadenoma destruens, invasive mole, or malignant mole.

In this lesion, trophoblastic proliferation is usually more striking. Normal trophoblastic cells have the role in the body of invading and opening blood vessels at the placental site. It is an extension of this normal tendency which leads to malignant behavior. Accordingly, at the top of the neoplastic scale we have choriocarcinoma, which is a highly malignant neoplasm composed of trophoblasts. We see no villi in choriocarcinoma, and local invasion and metastasis by the blood stream are characteristic. Because of the tendency to open blood vessels, hemorrhage at the site of metastasis is quite common. These features were well demonstrated by the case under discussion.

Dr. J. T. Bradbury, Obstetrics and Gynecology: In this condition, as Dr. Longnecker has just pointed out, the proliferation of the trophoblast of the benign placenta changes to a malignant proliferation of the mole, or chorioepithelioma. Along with this increased proliferation of trophoblast, there is an increased output of chorionic gonadotrophin. The placenta produces this substance, but except during the early weeks of pregnancy, the serum titer never exceeds 100 units per cc. Titers in excess of 200 units per cc., constitute good evidence of hydatidiform mole or chorioepithelioma.

At the time this patient was admitted, her blood titer was about 1000 units per cc. This is five times the minimum of 200 units which, in our experience, is diagnostic of trophoblastic disease. During the early phases of treatment, the values fell to less than 10 units per cc of serum. This was a hundred-fold drop in titer, and the progress was encouraging. Later on, the reverse trend toward higher titers indicated that the malignancy was progressing in spite of the therapy.

Unfortunately the Asheim Zondek tests that

were done in the months between her delivery and her arrival here were only qualitative ones, and it was presumed she had become pregnant again. Possibly if the A-Z tests had been done in a quantitative manner, the diagnosis of chorioepithelioma would have been made much earlier. The quantitative test is merely a dilution technic for finding the minimal dose that will give a positive test. Each laboratory needs to establish its own range of normal values, depending on whether the frog, rat or rabbit is used for the bioassay.

Dr. W. C. Keettel, Obstetrics and Gynecology: I should like to comment briefly on the etiology of this disease. You are familiar with the facts that in 50 per cent of cases choriocarcinoma develops following a mole; in 25 per cent after a term pregnancy; and in 25 per cent following an abortion. Thus the more abnormal the gestation, the higher the frequency of choriocarcinoma. After a term pregnancy, the chance that a choriocarcinoma will develop is 1 in 150,000 deliveries; after an abortion—and abortions occur in about 10 per cent of pregnancies—1 in 15,000 patients will develop choriocarcinoma. Following an ectopic pregnancy—which occurs once in 300 gestations—the incidence is 1 in 5,000; but with a molar pregnancy—which occurs in 1 of 2,000 pregnancies—it is estimated that 2.5 per cent will develop choriocarcinoma. Chorioadenoma destruens, which is an invasive mole, occurs in 16 per cent of the patients with molar pregnancy.

The detection of choriocarcinoma is easier following a molar pregnancy, since it is one of the anticipated complications. After the mole has been expelled and the uterine cavity has been curetted, the pregnancy test should become negative within four to six weeks, and should remain so. These patients should be warned not to become pregnant again for at least nine months to one year. If the patient has a thecal luteal cyst, it takes longer for the biological test to become negative. The reappearance of chorionic gonadotrophins is highly suggestive of choriocarcinoma. Other suspicious signs of choriocarcinoma are irregular vaginal bleeding and enlargement of the uterus.

Since chorio is so uncommon following a term pregnancy or an abortion, we forget to consider this condition when suggestive symptoms occur. Recently, we have treated three patients with choriocarcinoma following a term pregnancy. Each had a different entering complaint: one had respiratory symptoms, one had a bleeding problem and the third had neurologic symptoms.

This disease was considered one of the most fatal of all malignancies until the introduction of amethopterin. Prior to the use of this agent, patients with chorioadenoma destruens were treated by hysterectomy and occasionally by local excision of an isolated nodule, with good prognosis. In true choriocarcinoma, the treatment of choice was abdominal hysterectomy and bilateral sal-

pingo-oophorectomy. Extended surgery offered no advantage, since the spread was by venous channels. If there was metastatic disease, it was treated with irradiation.

The chance of survival with metastatic spread was less than six per cent, and even when the disease was confined to the uterus, the chance of survival was only 16 per cent. Dr. Hamilton has intimated that there were occasional patients with metastatic disease who had spontaneous regression after hysterectomy. This, however, was extremely uncommon.

Five years ago the Methotrexate was first used in the treatment of choriocarcinoma. It was felt that this drug might be of value since it is a folic acid antagonist, and it is assumed that embryologic tissue, such as trophoblasts, would be dependent upon folic acid. Dr. Roy Hertz, of the National Institutes of Health, has now treated 63 patients having various types of trophoblastic disease with proven metastatic spread, and has obtained a 48 per cent survival. While those have not been five-year survivals, many have lived at least three years. This success is highly significant, since the majority of patients die within the first year, and it is a remarkable improvement from the six per cent survival without chemotherapy. A few patients have not been subjected to hysterectomy, and after being cured have completed normal subsequent pregnancies.

Dr. Jacobs mentioned that we used intermittent therapy, treating for five days, waiting for signs of toxicity to subside and then starting another course. This type of therapy is continued until the chorionic gonadotrophins have disappeared, both from blood and from urine. One wonders whether this is the best method of administration or whether a smaller amount of the drug should be given continuously. Since Dr. Hertz's results have been so striking and because this is such a lethal disease, no one has wished to experiment with variations in the dosage schedule.

This particular patient seemed to respond well at first, but then developed a resistance to therapy or perhaps an increase in the cerebral metastases. Actinomycin-D should have been instituted earlier, when the titer started rising, but in view of the postmortem findings it would not have helped materially. It would appear that this patient had too extensive a spread prior to initial therapy. Dr. Hertz has demonstrated that the prognosis is very poor in patients who have had the disease for six months or more, in those with cerebral metastases and in those with kidney obstruction. It appears that the histology of the tumor is not important nor is the height of the titer. There is slight evidence that oophorectomy may improve the survival.

A number of complex problems prevented this patient from being treated earlier. About eight weeks postpartum, dilatation and curettage were

done because of irregular bleeding. There was marked trophoblastic proliferation, and some decidua were present. The pathologist did not consider these findings abnormal. We have seen these slides, and although it is always easier to diagnose in retrospect, we feel the condition should have been diagnosed as choriocarcinoma at that time. The patient became concerned about the continued bleeding, and the physician to whom she transferred her case wanted to do a repeat dilatation and curettage four weeks later. The hospital would not permit this surgery because the pregnancy test was positive. The chance of a normal gestation just four weeks after dilatation and curettage is most unlikely, however, and if the situation had been explained to the administrators in more detail, the repeat procedure could have been carried out in a Catholic institution.

Dr. Ziffren: We have a distinguished visitor here, Dr. Willard Allen, professor and head of the Department of Obstetrics and Gynecology at Washington University, St. Louis. Would you care to comment on this case, Dr. Allen?

Dr. Willard Allen: I am sure I cannot add anything of great importance. I did ask Dr. Keettel a question, very quietly, about the appearance of the decidua in the original curettings. Even though one found a few old chorionic villi in a patient who was bleeding 10 to 12 weeks postpartum, he would not expect to find any decidua, or even anything that looked like decidua. I bring this up because we had a patient several years ago who developed intracranial metastases from a chorio. The patient had bleeding, and on curettage was found to have very well developed decidua that helped us decide that her slightly enlarged ovaries were producing the hormones responsible for decidual changes. I believe that the finding of decidua was important, and that some significance should have been attached to it.

We recently had a chorio that developed following a mole. The pulmonary lesion was as large as the one seen in the right upper lobe of this patient. Our patient had two courses of Methotrexate, each of five days' duration with a two-week interval between them. At the completion of the first course, the titer was falling, and at the beginning of the next course it was negative. It remained so thereafter. This patient actually had only two courses of treatment because the lesions progressively decreased in size and the titer became negative. One year after treatment, only a little scarring was noted in the area where this fairly large, discrete tumor mass had been located. The uterus was not removed, and the patient is now having normal menstrual periods. I mention this as a specific illustration of the cases to which Dr. Keettel has alluded—those treated without hysterectomy.

I am curious about the percentage of your pa-

tients who have survived with Methotrexate. Is it 50 per cent?

Dr. Keettel: Yes. We have had four patients with choriocarcinoma in the last 18 months, three of them following term pregnancies. Various symptoms were present. One was seen because of continuing postpartum bleeding, one because of marked respiratory distress, and the third because of neurologic signs. One survival in this group had massive chest metastases. The other patient who survived had a molar pregnancy which perforated and was treated by hysterotomy, with repair of the defect. Afterward, the titer increased and bleeding continued, and a diagnosis was made of choriocarcinoma. That condition was treated by abdominal hysterectomy and bilateral salpingo-oophorectomy, and the diagnosis was confirmed pathologically. The patient developed a recurrence in her pelvis, and has been successfully treated with Methotrexate.

Dr. Allen: I'll ask you another question. You said that six per cent of these patients had pulmonary metastases and regression. Have you ever seen a patient with chorio and pulmonary metastases who survived prior to Methotrexate?

Dr. Keettel: I have not.

Dr. Allen: Neither have I.

Dr. Ziffren: I should like to ask Dr. Bradbury whether the same type of units are used for the male who has a similar tumor.

Dr. Bradbury: It's the same test, the same substance.

Dr. Ziffren: The same hormones?

Dr. Bradbury: The same hormones.

Dr. Ziffren: What is the cure rate in the male?

Dr. Keettel: It is very low. The prognosis is also unfavorable in the female who has primary choriocarcinoma of the ovary. This is a type of embryonal carcinoma, and the survival is poor even when treated with Methotrexate.

CLINICAL DIAGNOSIS

Choriocarcinoma with metastases to pelvis, lung and brain

STUDENT DIAGNOSIS

Choriocarcinoma with metastases to lung and brain

ANATOMIC DIAGNOSES

Choriocarcinoma, primary in uterus, with metastases to parametrium, liver, lung, brain, adrenal, pancreas, thyroid, kidney and bowel

Cerebral edema, mild

Bronchopneumonia, bilateral

A Lesson From Rome

"In a little time, when the emperor Octavius had allured to his interests the soldiery by a profusion of largesses, the people by distributions of corn, and the minds of men in general by the sweets of peace, his views grew more aspiring. By degrees, and almost imperceptibly, he drew into his own hands the authority of the senate, the functions of the magistrates, and the administration of the laws. To these encroachments no opposition was made. The true republican had perished, either in the field of battle, or by the rigour of proscriptions; of the remaining nobility, the leading men were raised to wealth and honours, in proportion to the alacrity with which they courted the yoke; and all who in the distraction of the times had risen to affluence, preferred immediate ease and safety to the danger of contending for ancient freedom. The provinces acquiesced under the new establishment, weary of the mixed authority of the senate and the people, a mode of government long distracted by contentions among the great, and in the end rendered intolerable by the avarice of public magistrates, while the laws afforded a feeble remedy, disturbed by violence, defeated by intrigue, and undermined by bribery and corruption."

—THE ANNALS OF TACITUS, Book I, Chapter 2



RECOMMENDED READING

In the Annual Discourse presented at the annual meeting of the Massachusetts Medical Society in May of this year, and published in the May 23 issue of the *NEW ENGLAND JOURNAL OF MEDICINE*,* Dr. Charles H. Bradford, a Boston orthopedist, presented an eloquent discussion on "aims and ideals in the medical world." Everyone who has access to that excellent journal is urged to read and re-read Dr. Bradford's discourse, but for the benefit of those who don't have access to it in its entirety, here are several excerpts:

"The appeal that humanity makes, from death, for life, is more than a mere plea for survival, for life is never complete until every component in the machine for living is functioning perfectly, and without impairment. To restore life, we must restore activity, we must restore health, and we must restore happiness. Therefore, the doctor must look deeply into the intricate mechanisms of the body to gain a full understanding of their workings. This will bring him closer to the mysteries of nature, and from them he will learn something of what the *BOOK OF JOB* calls the 'Wisdom of the Inward Parts.' This includes the biochemistry of enzymes, the masterful secretions of the endocrines, the carbon-oxygen exchange of alveolar membranes, the glomerular filtration of the kidneys and a thousand other miracles of physiology. The doctor observes the anatomic perfection of the hand, and the stabilizing microphones of the ear, and the television screens of the retina, and the multiple batteries of electric computers in the brain, and from all of these, he gains a new reverence for the incomprehensible power that created man, 'so curiously and so wonderfully wrought.' Such a marvel could not have evolved without the operation of a supreme and divine intelligence. If this thought deepens the faith of the modern doctor, it only reaffirms the ancient texts of the *HEBREW PSALMS* when they say, 'He that planted the ear, shall he not hear; he that formed the eye, shall he not see; he that teacheth man knowledge, shall he not know!'

* * *

"The materials the doctor handles compose the very fabric of life itself; the mission he serves, the objective he seeks, and the *vision* that guides him,

* Bradford C. H.: Annual discourse: medical aims and ideals. *NEW ENGLAND J. MED.*, 268:1147-1150, (May 23) 1963.

are best expressed in the words of the Gospel, 'Give life, and give it more abundantly.'

* * *

"As we wield . . . healing powers, we should pause to acknowledge our extreme good fortune in having been given miracles to work with, rather than myths and fables, like the doctors before us. This has made our generation the most privileged that ever entered the ranks of medicine, and by the same token, it should bring us more joy in our work than came to our predecessors. Some doctors are apt to complain of their frustrations, their hard hours, their heavy responsibilities and their perilous decisions, but here for a change, let us take the time to say a few words about our joys. . . . Joy is a more profound emotion than pleasure or happiness, for it dips its buckets deeper into the wells of the spirit, and draws up satisfactions that superficial experiences could not reach. What joy, for example, could compare with mastering the knowledge that enables us to lift the burden of sickness off men's bodies and to liberate them from the thralldom of disease?

* * *

"If medicine is to regain its former status, it must resume its service of friendship; it must renew its personal interest in the patient, and it must reaffirm its faith in the mission to give life and give it more abundantly. Though medicine is scientific, life is spiritual.

* * *

"Thus, people everywhere, whether they realize it or not, live under the constant shelter and protection of the medical profession, and it becomes our obligation as doctors to make sure that adequate help is always available. We occupy both the front rank and the rear rank, the outermost and the innermost positions in the protective network of medical defense that shields the community; in this responsible position, we must never forget the lifesaving nature of our service, or the insistent duty that it imposes. If we neglect either, we cease to be physicians in the true sense of the word and become mere technicians, or merchants of health.

* * *

"Medicine must march *with* the times, not *against* the times, and wherever it can enlarge its service by governmental programs, it should welcome the opportunity—so long as this does not destroy the individuality and initiative and personal responsibility on which its effectiveness rests. For the future, let us hope that medicine may escape from political entrapment, that the splendid treasure house of healing will never be exposed by visionaries to the plunder of demagogues and that physicians may always continue to confront the perils of life and the challenges of

death with unhindered freedom in their God-given profession."

Adherence to the philosophy expressed by Dr. Bradford would assure the medical profession an unassailable place in the nation, in the community and in the hearts of men.

KIDNEY HOMOGRAFTS

A recent report by Murray and associates* at Peter Brent Brigham Hospital and Harvard Medical School, on an experience with human-kidney homografts in 13 patients, is an exciting and encouraging one. It is a dramatic example of the efforts that are being made in several research centers to transplant organs successfully from one individual to another.

In nine of 13 patients in whom the transplants were performed, renal function occurred in the transplanted kidney. One 23-year-old young man, operated upon in April, 1962, was alive 12 months after the transplantation, was working as an accountant, and was living at home, though reporting daily to the hospital. He was being maintained on an antimetabolite and prednisone administered daily. One patient had survived 160 days before dying as a result of cerebral hemorrhage. At the time of the report, in addition to the patient who had survived a year, there were survivors at 40, 60 and 110 days after transplants.

The source of the kidney was a cadaver in five of the cases, from an infant with hydrocephalus undergoing subarachnoid-ureteral shunt in five cases, and from a living donor in three cases. In the instance of the young man who had survived for a year, the transplant had been procured from a cadaver. The three transplants from living donors had been the most recent in the series, and the transplanted kidneys were continuing to function at the time of the report.

Aside from the technical problems of transplantation, the most serious obstacle to success is the rejection and destruction of the graft by the immunologic reaction of the recipient to the implanted cellular tissues of the donor—the so-called homotransplantation reaction. Various methods have been tried in an endeavor to modify or inhibit the immunologic response to the antigenic stimulus of the transplants. Total-body irradiation has been employed by various investigators; irradiation of certain lymphoid tissues such as the spleen and the thymus and the site of the implant has been undertaken by others; and a combination of irradiation and drugs has been administered to suppress the immune response by still others. In the management of the 13 cases described by the Boston group, drugs alone were used to prevent rejection of the transplanted kidneys.

In the investigators' earlier experience with renal

transplants in dogs, the drugs employed to condition the donors proved to be highly lethal. Consequently, it was decided that in human beings a minimal dose of the drugs would be employed, and if incipient rejection to the transplant became manifest, it would be treated by means of appropriate drugs. Imuran, an immunosuppressive drug, was the most important agent employed to inhibit the antigenic response, and this was continued in a daily dosage. In the early postoperative period, the patients were also given Azaserine, an alkylating agent. Actinomycin C was given to several patients, and it appeared to contribute to a reversal of the rejection process. The place of the corticosteroids in the management of such patients is still undetermined, but they may assist in reversing the rejection.

Parsons and associates,** from the General Infirmary, Leeds, England, recently reported the successful transplant of a kidney from a cadaver in two patients, but one patient succumbed 33 days after the operation, and the other died from recurrent pyelonephritis 3½ months after the operation. The British group employed cyclophosphamide or Cytoxan to suppress the immunologic response of the recipient. The cadaveric kidney was procured promptly after the donor's death and was cooled to 10°C. by a perfusion technic. It was thought that renal function could thus be protected by reducing metabolism, preventing ischemic acidosis, and preventing renal-artery spasm and thrombosis of the small vessels.

It must be fully understood that kidney transplantation is still purely a research project, and that it has been employed only in patients with irreversible uremia. Transplantation of a kidney from a monozygotic (identical) twin of the patient with irreversible uremia eliminates the hazard of the homotransplantation reaction. According to the Boston group, the greater the genetic disparity between donor and host, the more dramatic the need for conditioning the host.

Murray and his colleagues conclude that in the present state of knowledge, it appears advisable to continue using expendable kidneys in this experimentation. Special effort should be made to solve the logistic problems of procurement and preservation of cadaveric kidneys. The indiscriminate transplantation of kidneys from adult living volunteers is inadvisable at this time. Although chemical suppressive agents may be temporarily successful, there are many unanswered questions such as the eventual status of the homografted kidney, the length of time during which drug therapy must be maintained, and whether the original kidney disease will develop in the homograft. The influence of the suppressant drugs upon the total immunologic response during the lifetime of the host also remains unknown.

Despite the many problems relating to human

* Murray, J. E., Merrill, J. P., Harrison, J. H., Wilson, R. E., and Dammin, G. J.: Prolonged survival of human-kidney homografts by immunosuppressive drug therapy. *NEW ENGLAND J. MED.*, 268:1315-1323, (June 13) 1963.

** Parsons, F. M., Markland, M., Raoer, F. P., and Fox, M.: Cadaveric renal transplantation. *BRITISH M.J.*, 1:930-931, (Apr. 6) 1963.

Editorials continued...

homografts, the Boston group conclude: "This report permits a note of optimism in a problem that 10 years ago was considered almost insoluble."

DIVERTICULITIS OF THE COLON

Diverticulitis of the distal portion of the colon has become a common problem that taxes the judgment of the clinician and the surgeon. It is estimated that 10 per cent of persons more than 40 years of age have diverticulosis of the distal portion of the colon and that one-fifth of these develop sufficient inflammation to warrant a diagnosis of diverticulitis. The staff members of the Department of Surgery at the Montreal General Hospital* have reported their experience with 370 patients with diverticulitis who were admitted during the years 1935 to 1959. Such a report should be of value to the physician who must undertake the management of patients with this condition. Approximately one-fourth of the patients admitted to the Montreal General Hospital because of diverticulitis developed complications, and there was a resultant mortality of 5.4 per cent. This latter figure provides us an indication of the potential seriousness of the condition.

The Montreal physicians divided their 370 cases into three groups according to the extent and the nature of the disease. Group I consisted of 284 cases of simple diverticulitis in which the inflammatory process was confined to the diverticula and the immediately surrounding area. Gross suppuration was not present, and stricture of the colon had not developed. Group 2 was made up of 20 patients in whom fibrous stricture of the colon related to the diverticula was present. Group 3 consisted of 66 patients in whom gross abscess formation had occurred, in contrast to the minute abscesses often found in patients with simple diverticulitis.

Of the group of patients with simple diverticulitis, 76 per cent responded to medical treatment and recovered without surgery. Surgical treatment was required in 68 patients. Resection of the colon was performed in 38 patients, and in 33 of them a proximal decompression was done, usually a transverse colostomy. The indications for resection were colonic obstruction, perforation with generalized peritonitis, repeated attacks of acute inflammation, and in a considerable number, the possibility of carcinoma of the colon. Colostomy alone was performed in 16 cases. Other operative procedures were performed in 14 of the 68 patients—laparotomy alone in nine, ileocolostomy in two, closure of a perforated diverticulum in two, and an exteriorization of a mass in one patient. In the group of 68 patients operated upon, there were

two deaths, making the mortality rate 0.7 per cent for the 284 patients classified as having simple diverticulitis.

The 20 patients with chronic stenosing diverticulitis were so classified because of the evidence of fibrosis and stenosis in the pathologic specimen, the presence of narrowing of the colon for at least nine to 12 months, and a history of recurrent partial obstruction during periods ranging from two to 12 years. Eight of this group of 20 patients did not have surgical treatment, and 12 were operated upon because of obstruction. Eleven of them underwent resection. Three of the group had primary resection, and the other eight, who had undergone colostomy previously, had stomas that were not functioning. The mortality rate in the 20 patients with chronic stenosing diverticulitis was 20 per cent. Of the eight patients treated conservatively, four had died, three were symptom-free after three years, and one patient was lost to follow-up. Two of the 12 patients who had been operated upon died following the operation.

Among the 66 patients with suppurative diverticulitis, only seven were treated conservatively. This therapy consisted of intestinal decompression, the administration of antibiotics, and the prescribing of a low-residue diet. The decision to treat these patients medically rather than surgically was based upon the presence of septic fever; an acutely tender mass palpated rectally or in the left lower quadrant, with cellulitis of the overlying skin; drainage of pus rectally or vaginally; and x-ray evidence of an abscess or of an internal or blind fistula. All of the seven patients treated conservatively survived. Fifty-nine patients in the suppurative group were subjected to operation. The indications for surgery were suppuration, colonic obstruction, perforation, generalized peritonitis, fistula, empyema and pyelophlebitis. In 27 of the patients, the abscess was about the diverticula and within the mesocolon. There were three deaths in this group, or a mortality of 11 per cent. Large paracolic abscesses were present in 32 of the suppurative group, and were walled off in the pelvis or in the left iliac fossa. Of the 32 patients with paracolic abscesses, 11, or 34.4 per cent, died. Drainage of the abscess and proximal colostomy were done in 19 cases; three of these patients died after operation. When the abscess stopped draining, eight patients had resections of the colon and two of them died. The colonic stoma was closed in eight patients, and in three the stoma was permanent. In three cases drainage of the abscess and proximal cecostomy were performed, and two of the patients died. One patient died after a transverse colostomy, and one succumbed just as the anesthetic was being started. In all, there were 14 deaths in the suppurative group of 66 patients—a mortality of 23.7 per cent.

As a result of this experience with 370 patients, the Montreal surgical group concluded that medical management is successful in the majority of cases of simple diverticulitis, and that if surgery

* Estrada, R. L., Hoehn, R. J., and Robertson, H. R.: Diverticulitis of distal colon; twenty-five years' experience. *POSTGRADUATE MED.*, 31:30-36, (Jan.) 1962.

is required, the mortality is low even if obstruction or free perforation has occurred. Despite the good response to conservative treatment, surgical intervention was found necessary in 24 per cent of the group with simple diverticulitis. The greatest difficulty was encountered and the majority of the deaths occurred in those cases in which paracolic abscesses had developed. Some deaths were ascribed to a series of exhausting operations performed in an attempt to eradicate infection.

The special lesson learned from the Montreal study was that the patient with diverticulitis should be managed with great care so that the hazardous phase of frank suppuration may be anticipated and, if possible, prevented. If a patient does not respond promptly to medical treatment, operative intervention should be seriously considered. It is now felt that surgical procedures can be carried out with a high degree of safety before suppuration and abscess formation make corrective procedures hazardous. Those patients in whom diverticulitis recurs repeatedly are also considered proper candidates for resection. In the management of diverticulitis, the clinician is in a difficult position. He cannot predict with certainty which case of simple diverticulitis will subside and which one will develop serious complications. By carefully following the patient and by exercising sound judgment, however, he can appreciably reduce the morbidity and mortality from diverticulitis.

INFECTIOUS MONONUCLEOSIS

A study at the Department of Infectious Diseases of the Royal Free Hospital, London,* has confirmed several previous studies indicating that infectious mononucleosis is not the innocuous malady it was originally reputed to be. Eighty cases of infectious mononucleosis were admitted there between the summer of 1959 and the fall of 1962. Patients were admitted all during the year, but there were increases in admissions in the spring and fall, and a peak in February. Eleven patients were under 15 years of age—five of them male and six female. Fifty-nine of the group were between 15 and 25 years of age—16 male and 43 female. Ten patients were over 25 years old, equally divided as to the sexes.

Because of the fact that symptoms and signs of the disease are so varied, it was found that the final diagnosis had been determined on a combination of clinical, hematologic and serologic findings. The posterior cervical glands were invariably enlarged. The axillary and inguinal glands were frequently enlarged. The spleen was felt in fewer than half the cases. Injection of the tonsils and fauces usually was present, and an exudate was present in over half the cases. The exudate was creamy and could be easily removed without bleeding. Edema of the throat was common, and

was severe enough in one patient to obstruct breathing.

Cultures were taken from the nose, the throat and the postnasal space. Pathogenic organisms were isolated in only 19 cases. Forty-four of the 80 patients had received antibiotics before admission, but pathogens were found in nine of the group. It was felt that the administration of antibiotics had had little if any influence on the development of secondary infection.

An enanthem, usually consisting of pinpoint petechiae along the division between the soft and the hard palate, was observed in 33 cases. A fine macular rash, similar to the rash of rubella, occurred in 11 patients, usually between the tenth and the fourteenth days of illness. Periorbital edema was present in eight of the 80 patients.

Blood studies revealed the presence of atypical mononuclear cells, particularly during the acute phase of the disease, and these often comprised over 80 per cent of the white blood cells. This was particularly characteristic in those patients with the anginose form of the disease. These cells rapidly disappeared as the patient's temperature subsided and the exudate separated from the tonsils. In the first few days of the illness, leukopenia and a relative lymphocytosis were characteristic, but in the well established case, a white cell count of 12,000 to 18,000/cu. mm. was common.

The heterophile antibody was absent or in low titer in the first week of the disease, and usually attained a maximum during the third and fourth weeks. In one case the Paul-Bunnell test did not become positive until the seventh week, and in seven patients—five of them under 10 years of age—the test never became positive. The titer of antibody did not reflect the severity of the disease, and there was no correlation between the titer and the development of complications.

The concept that infectious mononucleosis is a trivial and benign disease was refuted by the London experience. According to the author of this report, the majority of the patients complained of lassitude, anorexia, inability to concentrate and other manifestations of general systemic upset for many weeks and even months after the acute phase of the disease had passed.

One of the surprising results of the study was the finding that hepatitis occurs in practically every case, and should now be regarded less as a complication than as a part of the syndrome of infectious mononucleosis. Repeated conventional liver-function tests and enzyme determinations were done in every case. Conventional liver-function tests were frequently normal in the presence of greatly increased enzyme activity. The serum bilirubin was raised in 26 cases; jaundice was present in 12; and the liver was enlarged or tender in 27 patients. The serum glutamic oxaloacetic transaminase (SGOT) was elevated in 73 per cent of cases and the serum isocitric dehydrogenase (SICD) was elevated in 93 per cent of the 80 patients. There was often a wide daily fluctuation in

* Dunnet, W. N.: Infectious mononucleosis. *BRITISH M.J.*, 1:1187-1191, (May 4) 1963.

Editorials continued...

enzyme activity. The titer was usually highest between the second and fourth weeks, and most titers had returned to normal by the end of the sixth week. The degree of liver damage appeared to be unrelated to the severity of the infection.

Electrocardiographic changes indicative of non-specific myocarditis were observed in 13 cases (16 per cent). An abnormality of the T wave was the most common finding.

One patient developed a right lower-motor-neurone facial paralysis. Several patients had x-ray evidence of enlarged hilar glands, but there was no evidence of parenchymal pulmonary involvement.

According to the author, hepatitis can be assessed adequately by means of twice-weekly enzyme determinations. The serum isocitric dehydrogenase estimation is considered a sensitive and a specific guide to hepatocellular activity, and be-



By acclamation, Donovan F. Ward, M.D., of Dubuque, was elected vice-president of the American Medical Association, at the organization's June meeting in Atlantic City. He is the senior IMS delegate to the AMA, and has served on numerous reference committees of the AMA House of Delegates. This year, he was a member of the Reference Committee on Insurance and Medical Service, and of the Continuing Committee on Medical Practices. He was nominated for the vice-presidency by L. W. Swanson, M.D., of Mason City, and the delegations from a number of states besides Iowa gave active support to his candidacy. As vice-president, Dr. Ward will be an ex-officio member of the AMA Board of Trustees.

cause it is usually positive in infectious mononucleosis, it is useful as a diagnostic aid.

The treatment employed by the London group consisted of bed rest during the acute phase of the disease. Convalescence was gradual, and patients were not discharged from the hospital until the enzyme determinations were normal and the electrocardiogram had returned to normal. Emphasis is given to the need for prolonged convalescence if the patient is to be spared the frustration that is inevitable when he finds that he is unable to resume his usual activities. Chemotherapeutic agents and antibiotics failed to influence the course of the disease.

From the experience of others and from this study of 80 cases at the Royal Free Hospital, London, it is clear that the diagnosis of infectious mononucleosis is frequently difficult. Clinical, hematologic and serologic studies are necessary to a final diagnosis. Liver function studies and enzyme determinations indicate that hepatitis is, in fact, a part of the syndrome. Nonspecific myocarditis is a not unusual complication. Because of the generalized nature of the infection and the frequency of complications, convalescence should be slow and guarded.

DR. ZIMMERER SERVED WELL

We think it appropriate to reprint an editorial from a July 4 issue of the DES MOINES TRIBUNE and to say that we heartily approve of it, rather than to compose a tribute of our own. It is as follows:

The death of Dr. E. G. Zimmerer Tuesday ended nearly a half-century of conscientious service to the public health work in Nebraska and in Iowa.

He served in the Iowa State Department of Health from 1939 until his death, part of the time as director of the Division of Cancer Control and, during the last ten years, as commissioner and head of the Health Department.

He was a man who had studied at Harvard and in Vienna and who was associated with a number of national and international medical and health organizations. It is probable that he could have found greater financial rewards in private practice but he remained in that field only a few years after his graduation.

The job of running the State Department of Health is one of the most important in the state, although it may come to notice only when there is an epidemic or emergency. It is a detailed job involving relationships with all the doctors in all the towns in Iowa, and it is most likely to come to public attention when something goes wrong. Dr. Zimmerer was a quiet and conscientious man who did his work quietly, faithfully and well.

He was a career man in public health. As such he provided a day-by-day protection to the citizens of Iowa for which there is no adequate pay.

President's Page

Wednesday, September 18, has been selected for this year's Fall Conference of County Medical Society Representatives, and I hope that all county officers, committee chairmen, delegates, legislative contact men and Blue Shield liaison men will make a special effort to come to Des Moines for that day.

All who attended last year's meeting said they got a great deal from it, and every effort is being made to provide an equally interesting and valuable program this year. As most of you have heard me say on previous occasions, I am convinced that the principal way in which we can increase our effectiveness in all of our activities is by resolving our misunderstandings and disagreements, and by coordinating our efforts. The Fall Conference provides us a chance to do these things—but only if it is attended by several physicians from each county medical society. Doctors and the representatives from the Auxiliary will be guests of the IMS at lunch.

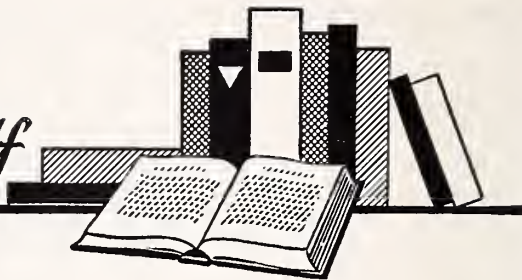
In the evening, the Polk County Medical Society will conduct its regular dinner meeting. Its guest speaker will be Mr. Hugh Brenneman, public relations counsel to the Michigan Medical Society. Out-of-town doctors are encouraged to attend, on a Dutch-treat basis.



C. W. Edwards, Sr.

President

THE JOURNAL *Book Shelf*



BOOK REVIEWS

THE CARE OF MINOR HAND INJURIES, SECOND EDITION, by *Adrian E. Flatt, M.D.* (St. Louis, The C. V. Mosby Company, 1963. \$10.50).

This well written, beautifully illustrated book on the treatment of minor hand injuries was first published in 1959, and has been well received. The second edition, just recently off the press, contains some slight modifications in the text, and 23 new figures have been added.

The important thing about this book is that it reflects Dr. Flatt's personal experience with hand injuries, which is considerable. The procedures recommended are accurately described as to operative technique; the details of after care, so important in surgery of the hand, are stressed.

The only criticism this reviewer can make of this book concerns emphasis. The use of thenar and cross finger flaps in the replacement of pulp loss on finger tips is, I believe, given too important a place. The vast majority of fingertip injuries associated with pulp loss are best treated either by free skin grafts or by shortening the distal phalanx slightly to permit flap closure of the remaining skin.

The dangers of thenar and cross-finger flaps include (1) unnecessary damage to the palmar skin or to an adjacent digit which must be resurfaced with a free skin graft, (2) frequent disability (stiffness of the hand, especially in older patients) resulting from immobilization of the hand for two or three weeks, while the flaps become attached in their new location, and (3) the partial or complete loss of the flap from infection, movement or technical difficulties.

Cross-finger and thenar flaps are indicated only in a small and very carefully selected group of cases, and in young adult patients (rarely in children). The technical pitfalls in the successful application of these useful flaps are manifold and can be avoided, in the opinion of this reviewer, only by skillful and experienced hand surgeons like Dr. Flatt.

With the above reservation, which concerns emphasis only, this book covering all aspects of minor hand injuries is highly recommended.—*Julian M. Bruner, M.D.*

HANDBOOK OF PEDIATRIC MEDICAL EMERGENCIES, THIRD EDITION, by *Adolph G. DeSanctis, M.D.*, and *Charles Varga, M.D.* (St. Louis, The C. V. Mosby Company, 1963. \$12.75).

The third edition of this most valuable handbook is presented in much the same manner as the previous editions, with revisions designed to update the ma-

terials and make them consistent with new advances in pediatrics. The chapters on cardiovascular emergencies, metabolic emergencies and eye injuries have been rewritten. New chapters on emergencies in the newborn and psychiatric emergencies have been added. The data on poisons, drug dosages and pediatric procedures are especially valuable. The liberal use of illustrations, reference data and tabulations is commendable.—*M. E. Alberts, M.D.*

MARGIN OF SAFETY, by *John Rowan Wilson, M.D.* (Garden City, New York, Doubleday & Company, Inc., 1963. \$4.95).

This book, by an editor of the *BRITISH MEDICAL JOURNAL*, is an exposé on the development of the poliomyelitis vaccines, with a remarkable account of the step-by-step rise and fall of the hopes and ambitions of the researchers as well as of the anxious public.

Many of the procedures involved in the development of these vaccines were fraught with poor results and disappointments. Pressures were exerted by interested groups—big business, misguided philanthropies and political factions. Many physicians will recall April 12, 1955, when the organization now called The National Foundation employed a maximum of ballyhoo in announcing the availability of Salk vaccine, even though so little of it had been produced that many people contended it could be secured only on the "black market."

This is an interesting book. It is of a type that will interest lay people as well as professional medical workers, for it presents an interesting insight into the workings of the minds of the American public as well. This reviewer found the report informative as well as most absorbing.—*M. E. Alberts, M.D.*

BOOKS RECEIVED

HANDBOOK OF THE PRACTICE OF ANESTHESIA, by *John R. S. Shields, M.B., Ch.B.* (St. Louis, The C. V. Mosby Company, 1963. \$6.85).

SCIENCE AND PSYCHOANALYSIS, VOLUME VI, ed. by *Jules H. Masserman, M.D.* (New York, Grune & Stratton, Inc., 1963. \$8.75).

TEXTBOOK OF MEDICINE, ELEVENTH EDITION, ed. by *Paul B. Beeson, M.D.*, and *Walsh McDermott, M.D.* (Philadelphia, W. B. Saunders Company, 1963. \$19.50 for a single volume and \$23.50 for the two-volume set).

RESULTS OF SURGERY FOR PEPTIC ULCER: A COOPERATIVE STUDY BY TWELVE VETERANS ADMINISTRATION HOSPITALS, ed. by *R. W. Postlethwait, M.D.*, and *James C. Thoroughman, M.D.* (Philadelphia, W. B. Saunders Company, 1963. \$8.00).

PREVENTION OF HOSPITALIZATION, by *Milton Greenblatt, M.D., Robert F. Moore, M.D., Robert S. Albert, Ph.D., and Maida H. Solomon, B.A., B.S.* (New York, Grune & Stratton, Inc., 1963. \$7.50).

PEDIATRIC CARDIOLOGY, SECOND EDITION, by *Alexander S. Nadas, M.D., F.A.C.P.* (Philadelphia, W. B. Saunders Company, 1963. \$16.00).

Cooperative Study of Anesthetics

A nationwide cooperative clinical study of anesthetic agents in wide use in this country will be conducted by the National Academy of Sciences-National Research Council, it was announced on July 1 by Surgeon General Luther L. Terry of the U. S. Public Health Service, and Dr. Frederick Seitz, president of the National Academy-NRC.

The two-year project is being supported by a \$1,650,000 research contract from the Public Health Service's National Institute of General Medical Sciences, National Institutes of Health, Bethesda, Maryland. The project will be carried out in approximately 20 hospitals, to be selected by the Academy-NRC, in various parts of the country.

The study is expected to provide comparative scientific data on the widely used drug, halothane, which was introduced in 1956 following extensive animal and human studies. It is estimated that more than half of the operations in this country are performed under this anesthetic and that about ten million patients have received it to date. The Surgeon General pointed out that halothane has achieved an extraordinary record of safety, and is considered one of the safest of the anesthetics in general use, if not the safest. Only since its advent has it been possible to do the heart surgery that is being accomplished today.

However, earlier this year several deaths due to liver damage were reported in patients who had

received halothane. Dr. Terry emphasized that it was not possible to determine whether any of these deaths was related to the anesthetic. Death may have been due to coincidental infectious hepatitis, or to other new drugs some of which are also suspected of causing liver damage, and which were received by some of the patients. It was pointed out that authoritative answers to the questions raised in recent months require a large-scale, carefully controlled scientific study.

Plans for the national project were developed by the Academy-NRC's Committee on Anesthesia after its members first recognized and identified the problem. Collaborating with the committee and its chairman, Dr. Emanuel Papper, professor and chairman of the Department of Anesthesiology, Columbia University, have been outstanding authorities in biostatistics and internal medicine. The study will incorporate the most advanced principles of experimental design, data-processing and statistical analysis.

Occupational Health Bookshelf

To provide a comprehensive reading list for physicians who desire to increase their knowledge of occupational health and its various disciplines, the Industrial Medical Association, in collaboration with the Division of Occupational Health of the U. S. Public Health Service, has issued a new booklet called "Occupational Health Bookshelf."

The "Bookshelf" contains a total of 182 references which are listed under the following headings: General Interest and Historical Background; Occupational Disease and Disability; Special Health Problems; Industrial Hygiene and Toxicology; Employee Health Programs, Personnel and Facilities; Preventive and Emergency Services; Disability Evaluation, Rehabilitation and Compensation; and Supplemental Bibliographies. Professional periodicals in the field of occupational health are also listed.

From the total list of references, 13 are designated as the most important basic references in the field of occupational health. The references that appear in this list were selected by a committee of the Industrial Medical Association including Drs. R. E. Eckardt, chairman, J. S. Felton, David H. Goldstein, E. V. Henson, Charles E. Lewis, Hallett A. Lewis, Harold J. Magnuson and Arthur J. Vorwald.

Single copies of the "Occupational Health Bookshelf" will be sent without charge if request is accompanied by a self-addressed envelope with 10c postage affixed (a No. 10 envelope, or a 9 x 12 inch size). Requests should be addressed to the Industrial Medical Association, 55 East Washington, Chicago 2, Ill.

W. B. SAUNDERS COMPANY features the following new editions in their full page advertisement appearing elsewhere in this issue:

**BEESON and McDERMOTT—CECIL-LOEB
TEXTBOOK OF MEDICINE**

The New (11th) Edition of a world-famous text, with contributions by 173 authorities and details of over 800 diseases

**GRAHAM—THE CYTOLOGIC DIAGNOSIS OF
CANCER**

An up-to-date revision explaining what can be learned from suspected smears through accurate laboratory methods

**MAYO CLINIC—CLINICAL EXAMINATIONS
IN NEUROLOGY**

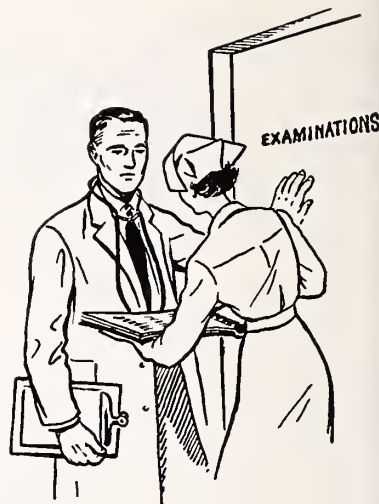
A famous medical center's working blueprint to effective neurologic examination.

THE DOCTOR'S BUSINESS

Your Life Insurance Coverage Should Be Carefully Planned

HOWARD D. BAKER

Waterloo



Prior to the enactment of the 1954 Revenue Code, life insurance proceeds always were included in the decedent's gross estate, thereby increasing estate taxes. In other words, if he had paid the premiums on a policy, it was included in his estate, regardless of ownership.

The 1954 Revenue Code and subsequent regulations have made it possible and profitable to avoid the tax, in part, by transferring ownership of a portion of your insurance to your wife and children. You can now pay the premiums on your policies and have the proceeds excluded from your estate by modifying the policies properly.

What must you do in order to take advantage of these new provisions? The important thing is for you to retain none of the privileges of ownership. These include the right to borrow on the policy in question, to pledge or assign it as collateral, to surrender it for cash, to change the beneficiary or to change the ownership. If you have retained none of these privileges, you may still pay the premiums but have the policy excluded from your estate in the event of your death. The tax savings on a \$10,000 policy transferred in this manner can range from \$300 to \$7,500, depending on the size of your taxable estate.

Transfers of policies can be accomplished by your insurance agent. It should be pointed out, however, that the transfer of old policies may create a gift-tax problem, and for this reason such transfers should be made only upon the recommendation of your estate attorney.

This is another of the various means by which you can minimize the estate taxes that your wife will have to pay. Your individual course of action should be governed by the combined advice of your insurance counselor and the attorney who handles your estate plan.

In most cases, life insurance is the major asset in a professional man's net worth, but in both estate planning and retirement planning, his life insurance must be given proper weight in relation to his other holdings. Regardless of the purpose for which he carries life insurance, it should be clearly recognized as a capital asset that will produce a fixed number of dollars, either to his beneficiary at his death, or to himself on his retirement. Coordinating life insurance and other assets means simply putting the pieces together into a plan that will accomplish all objectives most economically.

Consider the case of Dr. "A," who now has insurance that will provide a clean-up fund, that will pay off a mortgage and that will pay Mrs. "A" an income of \$150 per month for life, in case of his death. The doctor's goal is to leave his wife a certain income of \$300 per month, and on the basis of the foregoing information, we should conclude that he needs a substantial amount of additional insurance. But we haven't yet considered the facts that his medical building will provide additional income for his widow, and that he owns substantial amounts of stocks and bonds which will further supplement her income.

In a second example, Dr. "B" is planning for his retirement. It has been determined that he will need to invest \$175 monthly, to age 65, divided equally between fixed and variable investments, if he is to achieve his retirement goal and maintain a proper balance in his investments. But in the computation, the \$40,000 fixed cash value of his life insurance to age 65 hasn't been considered. This cash value will either reduce the required monthly investment, or will increase the income available to him at retirement. More importantly, it will affect the ratio of his future investments in fixed and variable contracts.

Whether you are planning your estate, programming your life insurance or planning for your retirement, you cannot overemphasize the importance of coordinating your life insurance with your other assets.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

Actions of the House of Delegates American Medical Association

112th Annual Meeting, June 16-20, 1963

Atlantic City

F. J. L. BLASINGAME, M.D.

Executive Vice President

ENLARGEMENT OF THE Board of Trustees, the sections and scientific program of the AMA, compensation for interns and residents, a new Institute for Biomedical Research, a physicians' pension plan and the relation between tobacco and disease were among the major subjects acted upon by the House of Delegates at the American Medical Association's 112th Annual Meeting held June 16-20 in Atlantic City.

Dr. Norman A. Welch of Boston, a member of the House of Delegates since 1951 and speaker of the House since 1959, was named president-elect of the Association by acclamation. Dr. Welch will become president at the June, 1964, annual meeting in San Francisco, succeeding Dr. Edward R. Annis, of Miami, who assumed office at the Tuesday night inaugural ceremony in Atlantic City.

The AMA 1963 Distinguished Service Award was voted to Dr. Lester R. Dragstedt of Gainesville, Florida, research professor of surgery at the University of Florida School of Medicine, for his achievements in the fields of education, research and practicing surgery.

Final registration figures at the meeting reached a grand total of 36,811, including 12,924 physicians.

BOARD OF TRUSTEES

The House adopted amendments to the Constitution and Bylaws designed to implement the recommendations presented in June, 1962, by the Ad Hoc Committee on the Board of Trustees. The changes will increase the size of the Board from 11 members to 15 members, by adding three elected trustees and including the immediate past-president for a one-year term. The amendments also set the term of office for elected Board members at three years and limit the number of terms to three, for a maximum total of nine years' serv-

ice. In approving the amendments, the House expressed the opinion that enlargement of the Board of Trustees "would improve communications between the Board and the Association" and that the proposed changes "would be consistent with the increase in membership of the Association and with the increase of the size of the House of Delegates."

AMA SECTIONS AND SCIENTIFIC PROGRAM

In considering the report of the Ad Hoc Committee to study the Board of Trustees Report on the Sections and Scientific Program of the AMA, originally presented at the 1962 Clinical Meeting in Los Angeles, the House disagreed with some recommendations in both of those reports.

A major change was the House decision that all section officers—chairman, vice-chairman, delegate, alternate delegate, secretary, assistant secretary and representative to the scientific exhibits—should be elected by members of the section and that no officers be appointed by the AMA Board of Trustees.

In another change, relating to nominations for specialty boards, the House approved the following recommendation: "The Committee of the Council on Scientific Assembly of the appropriate section shall nominate the AMA representatives to serve on the medical specialty certifying board. These nominations shall be submitted to the Board of Trustees."

In connection with section registration, the House decided that "a member of a section who desires to change his registration from one section to another because of a change in his specialty, shall be required to inform AMA Headquarters by written notice of this intention at least sixty days in advance of the Annual Meeting."

The House agreed with the Ad Hoc Committee's recommendation that the Section on Gastroenterology and Proctology be renamed the "Section on Gastroenterology" and that a separate "Section on Proctology" be established.

The House also commended the Board of Trus-

tees for its recommendation that a national forum be sponsored by the AMA in which representatives of national medical specialty societies and the Academy of General Practice will participate. The Board of Trustees was directed to implement this suggestion as early as possible.

INTERNS AND RESIDENTS

The House disapproved the report of the Council on Medical Service and the Council on Medical Education and Hospitals on Compensation of House Officers. In so doing, it adopted the following statement:

"We therefore recommend that in view of the overwhelming opposition to the basic proposal contained in the report of the Council on Medical Service and the Council on Medical Education and Hospitals, the AMA record itself as opposed to any system or program by which any part of an intern's or resident's salary is paid out of fees collected by the attending physician or out of fees collected under any type of medical-surgical insurance coverage."

The House, while declaring that the joint council report "represents a well-intentioned effort to find a solution to a most difficult, if not impossible, problem," recommended that any future proposals on the compensation of house officers be thoroughly studied by the Law Department and Judicial Council before submission to the House of Delegates.

In another action, related to the controversial "25 per cent rule," the House approved a revision of the Essentials of an Approved Internship which deletes the requirement for any stated proportion of foreign medical graduates and graduates of American and Canadian medical schools as an essential feature of any internship program.

NEW RESEARCH INSTITUTE

In acting upon two reports from the AMA Education and Research Foundation, the House approved the Foundation's announcement that it will establish and operate a new Institute for Biomedical Research.

The Institute will concern itself with intensive and fundamental study of life processes particularly as related to intracellular mechanisms. It will be composed of groups of dedicated, imaginative workers who are capable of significant scientific achievements through the interaction of their intellects and experiences, with unmatched facilities and maximum freedom from external pressures.

The Institute will be dedicated to pure, basic, non-disease oriented research, and it will not render medical service to patients and will not conduct a graduate training program leading to a degree. It is contemplated that the first research group should be functioning by early 1965.

PHYSICIANS' PENSION PLAN

The House approved establishment of an AMA physicians' pension plan under the provisions of the Self-Employed Individuals' Retirement Act of 1962, and noted that the Board of Trustees will make every effort to begin operation of the plan before the end of 1963 so that physicians will be able to participate this year.

The plan will be open to all AMA members and their employees who can qualify under the Act, Public Law 87-792 (Keogh Law).

The law allows a self-employed individual to set aside up to \$2,500 or 10 per cent of his annual income, whichever is less, in a retirement fund, with the first \$1,250 being deductible. The individual must provide proportionate benefits for any employee who works for him more than 20 hours a week and more than five months each year.

TOBACCO AND DISEASE

The House agreed with a Board of Trustees report which concluded that the AMA should defer any definitive statement regarding the relationship of tobacco and disease. The report pointed out that the AMA is continuing its study of this important subject and is merely deferring any public pronouncement pending the availability of more information, including whatever may come from the study of a committee appointed by the United States Public Health Service.

In taking this action, the House declared that extensive research is still necessary for the complete answers on the cause and effect of many toxins, including tobacco. However, the House said that the AMA "has a duty to point out the effects on the young of the use of toxic materials, including tobacco, and these facts should be disseminated, particularly in our schools."

MISCELLANEOUS ACTIONS

In considering a wide variety of resolutions and reports, the House also:

Disapproved a Judicial Council opinion on the dispensing of glasses by ophthalmologists and reaffirmed the Council's interpretation of Section 7 of the Principles of Medical Ethics, as reported in the November 15, 1958, issue of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Approved a Judicial Council opinion on physician ownership of drugstores, drug repackaging houses and pharmaceutical companies.

Approved of AMA participation in the recent formation of a Joint Commission on Medicine and Pharmacy.

Agreed with the Council on Legislative Activities that the House should take no official position on the "Liberty Amendment" but should call it to the attention of individual physician citizens.

Disapproved of federal funds for staffing new community mental health centers.

Took a position opposing the student loan provisions of the Health Professions Educational Assistance Act of 1963.

Urged all state and county medical societies to adopt and activate all phases of "Operation Hometown."

Recommended that local medical societies in the vicinity of medical schools assume the responsibility of establishing and maintaining clear lines of communication with medical students.

Approved the organization of the new National Council for the Accreditation of Nursing Homes, jointly sponsored by the AMA and the American Nursing Home Association.

Adopted the recommendations of the Committee to Study the Joint Commission on the Accreditation of Hospitals and suggested that the committee's report be distributed to constituent and component societies and hospital chiefs of staff.

Approved an alteration in the Association By-laws which states: "The Council on Medical Education and Hospitals shall consist of 10 Active or Service members at least one of whom shall be a private practitioner of medicine who is not a faculty member of a medical school nor a member of a staff of a hospital associated with a medical school or university."

Commended the American Farm Bureau for its vigorous leadership in opposing unwarranted government interference and regulation.

Urged the widest dissemination to AMA members of a joint report by the AMA Council on Mental Health and the National Academy of Sciences-National Research Council on The Use of Narcotic Drugs in Medical Practice and the Medical Management of Narcotic Addicts.

Recommended that all AMA members and affiliates give strong support to the national tuberculin testing campaign proposed by the American School Health Association.

Directed the Speaker of the House to appoint an *ad hoc* committee to study the size, make-up and functions of the House of Delegates, its councils, sections and committees and to report its findings in June, 1964.

OPENING SESSION

Dr. George M. Fister of Ogden, Utah, retiring AMA president, told the opening session that "our fight against federal dictation is not merely one of concern only to physicians and their freedom to practice the best medicine possible, but it also concerns, equally or more so, the individual citizen, all professions and the private enterprise system in this country." Awards announced were the AMA Scientific Achievement Award to John F. Enders, Ph.D., of Boston, and the Joseph Gold-

berger Award in Clinical Nutrition to Dr. John B. Youmans of New York City.

INAUGURAL CEREMONY

Dr. Annis, in his inaugural address Tuesday night, stressed the importance of maintaining an attitude of individualism among the physicians of America, and he urged members of the profession to have the courage and individuality to fight for all political, economic and professional freedoms. The Distinguished Service Award was presented to Dr. Dragstedt, and the Scientific Achievement Award was presented to Dr. Enders.

WEDNESDAY SESSION

Speaking at the Wednesday session, Dr. Annis declared that "now, more than ever before, there is an obligation for all of us to waive or at least to minimize any differences between or within regions, specialties or organizations and to stand together on fundamental principles of medical care and medical practice, of enterprise and of freedom for which our great Association has striven in the last 116 years."

ELECTION OF OFFICERS

In addition to Dr. Welch, the new president-elect, the following officers were named at the closing session on Thursday:

Dr. D. F. Ward of Dubuque, Iowa, vice president; Dr. Milford O. Rouse of Dallas, Texas, speaker of the House, and Dr. Walter C. Bornemeier of Chicago, vice-speaker.

Dr. Percy Hopkins of Chicago and Dr. Raymond M. McKeown of Coos Bay, Oregon, were re-elected to the Board of Trustees for three-year terms. Dr. Robert C. Long of Louisville, Kentucky, was named to fill the one year remaining in the term of Dr. Hugh H. Hussey, who resigned to become director of the AMA Division of Scientific Activities.

Elected to the three new posts on the Board, created by the House action on Wednesday, were Dr. Dwight Wilbur of San Francisco, three years; Dr. Lester Bibler of Indianapolis, two years, and Dr. L. O. Simenstad of Osceola, Wisconsin, two years.

Nominated and elected to the Judicial Council was Dr. Walter Judd of Minneapolis, physician, former member of Congress and 1961 winner of the AMA Distinguished Service Award.

For the Council on Constitution and Bylaws, Dr. William D. Stovall of Madison, Wisconsin, was re-elected, and Dr. Thurman B. Givan of Brooklyn, New York, was named to replace Dr. Bornemeier.

Elected to the Council on Medical Education and Hospitals were Dr. E. Bryce Robinson, Jr., of

Fairfield, Alabama; Dr. Francis L. Land of Fort Wayne, Indiana, and Dr. Melvin Breese of Portland, Oregon.

To fill vacancies in the Council on Medical Service, the House elected Dr. Burns A. Dobbins, Jr., of Fort Lauderdale, Florida; Dr. Irvin E. Hendryson of Denver, Colorado, and Dr. Jess W. Read of Tacoma, Washington.

By acclamation at the opening session, the House also expressed appreciation for the services of Mr. C. Joseph Stetler, the Association's general counsel and director of the Legal and Socio-Economic Division, who will be leaving July 1 to become executive vice-president and general counsel of the Pharmaceutical Manufacturers Association.

Research Career Award for S.U.I. Researcher

John W. Eckstein, M.D., associate professor of internal medicine at the S.U.I. College of Medicine, has been named to receive a Research Career Award from the U. S. Public Health Service. Awards are made to experienced investigators of superior potential and capability who are engaged in productive careers of independent research and teaching in the sciences related to health. Selection is based on nationwide competition.

The initial award provides that Dr. Eckstein's full salary will be paid by USPHS for the next five years, and future program objectives call for continued federal support for his entire career. He will continue his regular teaching duties in the College of Medicine. Other S.U.I. faculty members who have received Research Career Awards are Professor Reino E. Kallio, of the Department of Microbiology, and Dr. Nicholas S. Halmi, a professor of anatomy.

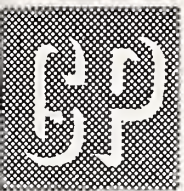
A staff member of the S.U.I. Cardiovascular Research Laboratories, Dr. Eckstein is engaged in a research program having three parts: studies on venomotor tone and blood volume distribution; studies on vascular reactivity; and studies on myocardial function. It is becoming recognized that changes in tone of the veins play an important role in circulatory stability and in a number of disorders affecting the circulatory system. Studies such as those being undertaken by Dr. Eckstein should also provide a clearer understanding of some of the mechanisms by which man adapts to different environments. The investigations could lead to a better understanding of a variety of ill-defined diseases and to better methods of treatment.

A nationally recognized authority in his field, Dr. Eckstein was born at Central City, took his B.S. degree at Loras College, Dubuque, in 1946, and received his M.D. from S.U.I. in 1950. He served an internal medicine residency at S.U.I., and was awarded a one-year Rockefeller Foundation Postdoctoral Fellowship in the Medical Sciences in 1952. He has been a research fellow of the American Heart Association, a special research fellow of the National Heart Institute, and an "established investigator" of the American Heart Association, one of the highest awards given by that group.

He has been active in the work of the Iowa Heart Association since 1953, as a member of the research committee, the board of directors and the executive committee, and he is now serving as vice-president of the Iowa Heart Association. On the national level, he is a member of the medical advisory boards of the American Heart Association's Councils on Circulation and High Blood Pressure Research.

He is author or co-author of more than 50 scientific articles, and is a member of many professional organizations including the American College of Chest Physicians, the American Federation for Clinical Research, the American College of Physicians and the American Society for Clinical Investigation.





Iowa Chapter of the American Academy of General Practice

Togetherness

V. L. SCHLASER, M.D.

Togetherness is a relatively new word in the English language, but in the past decade it has become a popular one, especially through the efforts of the clergy. Ministers and priests use it as a symbol for unity as they urge the retention of close relationships among members of families—especially between parents and children. Togetherness, I think, would be advantageous not only for families but for society as a whole, and it behooves us, one and all, to achieve it in our professional groups, in our communities and in our government.

Let us fix our attention on the possibilities for togetherness in medicine, the profession in which we doctors are most interested. Today, physicians are broken up into groups, and perhaps somewhat separated. For our mutual benefit and for the sake of the public that we serve, these groups should be reunited, or at least should be persuaded to strive for the achievement of identical goals. For this unity of purpose and of effort, I have in mind not only general practitioners and the various types of specialists, but also medical school faculties, medical and premedical students, the personnel of paramedical professions and the public as a whole.

Unfortunately, the length of this article does not permit a full discussion of all aspects of this proposal, but I shall enlarge briefly on several as a general practitioner views them.

In times past, physicians haven't given a thought to the premedical student. They have taken for granted that youngsters of sufficient ability would gravitate toward medicine more or less automatically. This is all in the past. Physicians must remember that future practitioners, future teachers of medicine and future research workers all must come from the young people who are growing up today, and that other scientific pursuits now rival medicine in offering them financial security, prominence and opportunities to serve their fellow men. Thus it has become one of the duties of physicians to discover and get in touch with young people who are physically, intellectually and psychologically suited for some branch of medicine. Doctors, individually or through their organizations,

must give these youngsters glimpses of the activities they can pursue as medical students, and afterwards as either instructors, researchers or private practitioners. The misconceptions they may have about medical training and medical practice must be corrected, and to as great an extent as possible, all obstacles—financial or of other sorts—must be cleared from their paths. By undertaking this work, physicians can make a start toward togetherness!

We doctors should take a vital interest in the training of medical students. Medical school curricula are not static; they change constantly so as to include all of the advances that are being made in scientific medicine. I don't intend that as practitioners we should tell the dean how to run his medical school, for he would like that no better than we should like him to tell us how to run our private practices. However, a togetherness between practitioners and medical school faculties would promote harmony in our profession. Because points of view differ and because we can be of great assistance to one another in myriad ways, more togetherness is needed.

Postgraduate education includes internships, residencies and refresher courses. In the past, a year of internship was considered sufficient, but it is now regarded as far too short a time in which to prepare a medical graduate for the practice of medicine. Thus there now are residency programs even for the prospective general practitioner. Moreover, after completing a residency program, practitioners, instructors and research workers must continue to study. Short courses and conferences allow the practitioner to keep himself up to date with scientific progress in the field of medicine. Togetherness in this area means the willingness to teach, on the part of those who possess the latest information, and the willingness to learn, on the part of those who will be able to make use of the new discoveries.

I want particularly to stress the importance of togetherness in private practice. As his primary aim, each of us is intent upon helping the injured and the sick. Since the practice of medicine is divided into general practice, specialties, sub-specialties and even super-specialties, togetherness is essential if we are to render maximum service to our patients. Our close cooperation has been

responsible, in considerable measure, for the high quality of the care we have been able to give them, and care must be taken to make sure that a close working relationship among the various branches of medicine continues and that it constantly improves.

Togetherness is also desirable for the medical and paramedical professions. Physicians should get down from their pedestal and work more closely with other health service personnel to promote the best interests of the public.

People generally are by no means certain that the physician of today is to be preferred over the horse-and-buggy doctor of 50 years ago. They need, of course, to be reminded repeatedly that life-expectancy has been lengthened, that hospitalizations have been shortened, and that diseases which once were crippling are now rapidly and routinely cured, with complete restoration of physical strength and earning-power. But it nevertheless is true that the horse-and-buggy doctor was a more loving and lovable man than is the physician of today. Togetherness, in its broadest sense, could help each of us to regain that most admired characteristic of our professional forefathers.

Perhaps some of us would like to substitute the word *cooperation* for *togetherness*, but I like the word *togetherness*.

Medical School Adopts New Grading System

Medical students at S.U.I. receive marks of "pass" or "fail," rather than the five letter grades A, B, C, D, E, and F that are used in the rest of the University. The new procedure was instituted last fall. As yet, no students have been graduated under the new system.

The students like the change, Dean Robert C. Hardin asserted on July 3, for they feel that it gives them more incentive to learn, rather than just to compete for grades. Yale University Medical School uses the system, he said, and Harvard and Rochester (N. Y.) use it in part. It is more common during the clinical years (the last two), and relatively uncommon in the basic-science years.

Any department at the S.U.I. College of Medicine may designate outstanding undergraduates as honors students.

A Promotions Committee appointed by the dean reviews the medical students' accomplishments and determines their eligibility for promotion. They are promoted on the basis of their class grades taken together, and on their seriousness of purpose, conduct and general fitness for entering the medical profession.

Students will have no trouble getting the internships they want under the new grading system, Dean Hardin declared. The majority of S.U.I. graduates get their first choices now. By the time

a student gets into medical school, he has proved himself, and the pressures of competition are unnecessary in medical school. Students, especially freshmen, will do better work without striving for grades, the dean thinks.

AMA Occupational Health Congress In San Francisco

"America's Best Resource—the Healthy Worker" will be the theme of the 23rd National Congress on Occupational Health, in San Francisco, September 25 and 26. The two-day meeting at the Jack Tar Hotel is sponsored by the AMA Council on Occupational Health.

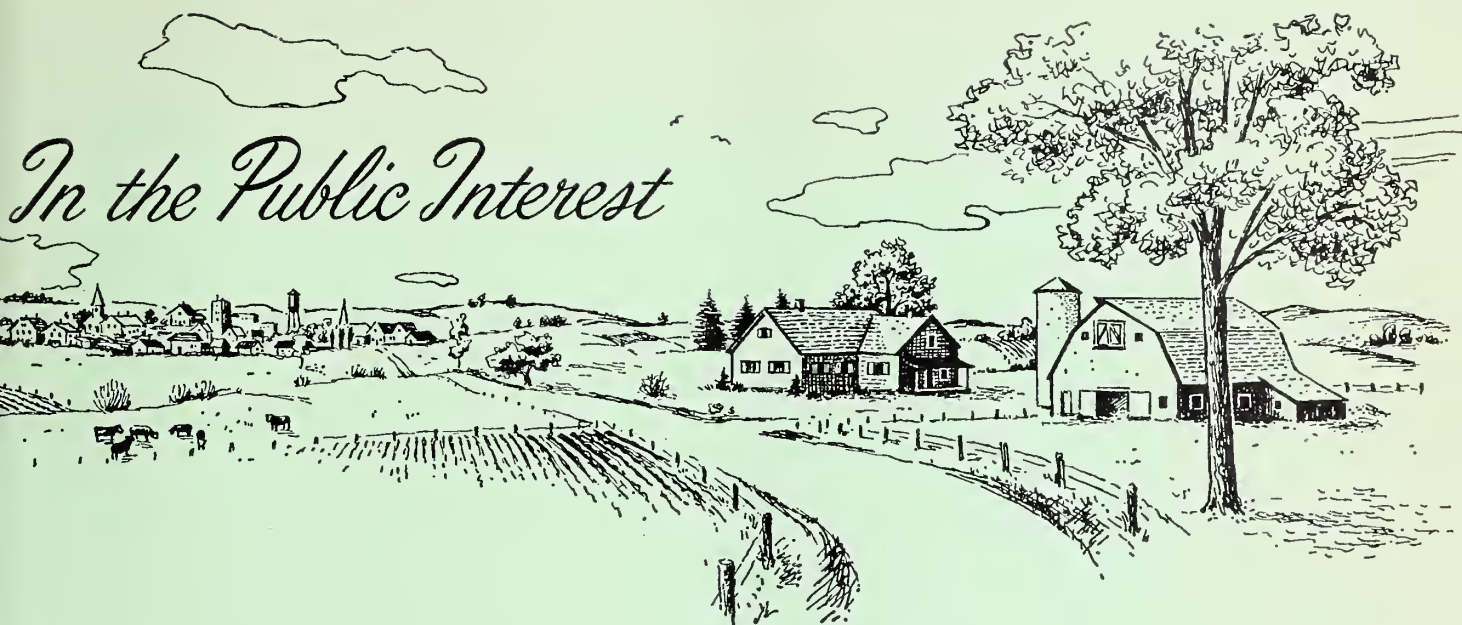
The topics that will be taken up include: 1. Occupational health problems faced by the family physician, 2. Educational resources for the practicing physician, 3. Restoration to gainful employment, and 4. Relationship of the personnel department to the medical department.

Other conference subjects will include: 5. Manipulation and postural balance in low-back pain, 6. Industrial absence and the personal physician, 7. Legal responsibility of the physician to the nurse in small industry, 8. Medical programs for small plants, and 9. Community health resources for small plant programs.

For further information, address the AMA Council on Occupational Health, 535 North Dearborn, Chicago 10.



At the annual meeting of the Medical Society Executives Association, on Saturday, June 15, in Atlantic City, the new president of the organization, Mr. C. Lincoln Williston, of Austin, Texas (left), received the gavel from Mr. Donald L. Taylor, of Des Moines, who served as president in 1962-1963.



In the Public Interest

County Medical Societies Are Asked to Encourage Working Relationships Between Physicians and Clergymen

County medical societies are being asked by the American Medical Association and the Iowa Medical Society to bring physicians and clergymen together in small groups, on two or more occasions each, so that they can become better acquainted, and by exchanging impressions and information, can prepare to work together more closely in helping the people whom they serve. At the national level, this project is one of the responsibilities of Rev. Dr. Paul C. McCleve, a Presbyterian minister and the director of the newly formed AMA Department of Medicine and Religion, and a committee of nationally prominent physicians and clergymen. At the state level a recently appointed committee with the same purpose consists of O. N. Glesne, M.D., Fort Dodge, chairman; H. L. Skinner, M.D., Carroll; L. O. Ely, M.D., Des Moines; and Herbert Shulman, M.D., Waterloo.

In preventing disease and in treating physical ailments, physicians need all the help they can enlist, and particularly in their efforts to "heal the whole man," the talents and skills that clergymen possess are ones of which they should want to avail their patients. The pastor and the doctor work in close proximity to one another on many occasions, but too often each of them is not fully aware of what the other is saying. Thus the intent of this project is not to devise new tasks, objectives or responsibilities for the members of either

profession, but merely to facilitate acquaintance-ship and frequent exchanges of information between them, man to man.

CLERGYMEN ARE ALREADY DOING ESSENTIAL HEALTH WORK

All of us are familiar with the essential services which chaplains perform in our hospitals. Frequently they make a valuable contribution merely through their cordiality to patients when they are admitted. The chaplain is a welcome friend in the starched and antiseptic world that the patient has just entered, and he constitutes a link with the family and friends whom the patient has left behind. More often than not, both lifelong-devout men and women and those who haven't previously been religiously inclined feel a need for the chaplain's prayers and reassurances, and sometimes it is apparent, indeed, that a patient's physical and psychological states have benefitted as much from the chaplain's attentions as from those of the doctor and nurses.

Clergymen with churches to manage and congregations to care for visit the hospitals occasionally and share in the chaplain's work, but most of their calls upon the sick and disabled occur in private homes. There, and at their churches, they bring consolation to the bereaved and the guilt-laden, they provide moral support to those whom

illnesses have left with permanent handicaps, and they rekindle hope, faith and self-confidence. Moreover, to the extent that their information permits, they exhort patients to follow their doctors' advice.

Unfortunately, however, a pastor too frequently knows only as much about his parishoner's ailments and about the therapeutic or rehabilitative program the doctor has outlined as the parishoner can tell him. How much more might he be able to do for the man or woman's recovery if the doctor were to provide him additional information!

THE PASTOR'S HELP IS VALUABLE IN MANY SITUATIONS

Many patients confined to their homes have disabilities requiring precautions or continuing medication that clergymen can help unobtrusively to enforce or supervise. Tuberculosis, for example, no longer requires prolonged hospitalization in most instances, but tuberculous patients must observe strict rules of sanitation after they return home, for the protection of thus far uninfected members of their families. Since such patients characteristically think they have recovered long before the infection has been eradicated, they need frequent reminders of their responsibility to their relatives and of their need for continuing with their prescribed medications.

There are many other situations in which a clergyman will be glad to cooperate with the doctor. He can help persuade the diabetic patient to keep her disease under strict control. He can share the task of helping a family to understand the special requirements of a patient who is about to return to their home from a mental ward. And he can urge the members of his congregation—from the pulpit and in private consultations—to keep up their immunizations against tetanus, smallpox, poliomyelitis and measles, and can remind them of their duty to keep poisons, firearms and sharp instruments out of the hands of their small children.

In the continuing care of elderly patients, a clergyman can render extraordinary service by making sure, periodically, that they are consuming adequate daily diets—if his parishoners' physician has told him the minimum constituents of that diet. Furthermore, if he finds when he visits them,

that all is no longer well, he can inform their children or other relatives, or can call upon one of his numerous church groups for assistance.

Not just in a few situations but in most of them, what patients need as much as anything else is a sympathetic listener, and the clergyman frequently serves in that capacity. In anticipation of such a session, however, the pastor would welcome the physician's views regarding the patient's psychological needs.

PHYSICIAN-CLERGYMAN MEETINGS SHOULD BE SMALL, INFORMAL AND FREQUENT

Meetings between clergymen and doctors should be as small and informal as possible, and such sessions should not be used, even in part, for the presentation of medicine's point of view on socioeconomic issues.

In the less-populous Iowa counties it may be satisfactory for the entire clergy to be invited to meet with all of the doctors, but in ones where there are more than a dozen members of each profession, several series of meetings should be started. The doctors in each small group should represent a full assortment of the faiths present in the community, and each of them probably should be asked personally to invite the pastor of the church that he attends. Quarterly or semiannual dinners with a maximum of eight men seated at each table may be the best means of encouraging acquaintanceships. The program might best be limited to a few words of welcome from one of the physicians.

A start at meetings between physicians and clergymen has been made in at least two parts of Iowa. Such gatherings take place each spring at Wartburg College, in Waverly, and the Scott County Medical Society has set up a Committee on Medicine and Religion and has devoted at least one of its regular meetings to that subject.

Rev. Dr. McCleve has prepared lists of specific suggestions for this project, and copies of them are available to all county medical society officers or individual physicians. Address requests to the Committee on Medicine and Religion, Iowa Medical Society, 529-36th Street, Des Moines 50312.

Iowa Association of Medical Assistants

Telephone Technic

With our present mode of travel, on four-lane divided highways or at least on two-lane paved ones, it is sometimes hard for us to remember the narrow, rough and dusty one-lane roads of past decades. We seldom see them, and rarely, if ever, travel them nowadays. Like the dead-end street, they were a limited means of communication. Alexander Graham Bell made possible an instantaneous two-way highway of communication with his invention of the telephone. We probably are still not using it to its full potential, nor do we always use it correctly or to the best of our ability.

Utilities are like good health. We take them for granted, and do not really appreciate their value until they are taken from us. If our use of the telephone were limited to a definite number of calls a day, or to specified hours during each day, we would very soon learn how to use it to obtain maximum benefits subject to the imposed restrictions. If we could learn to use the telephone more efficiently under such circumstances, why should we not do so simply to save time for jobs that currently don't get done or are repeatedly delayed? Since we spend more hours of daily telephone-time at work than we do at home, let's explore the possibilities of improving telephone technics in our offices.

The placement of the telephone is very important. It should be convenient for use, but not where conversations will be overheard, nor should your telephone service be limited to just one or two instruments. If you are assisting the doctor in an area where there is no telephone and leave to answer its ring, some of your time is wasted, to the detriment or at least to the annoyance of both the doctor and his patient. If there is an extension telephone in the treatment room, it takes only a moment for you to answer its ring, to take the caller's name and number, and to ask his permission to return the call. The doctor can usually proceed with what he is doing without being interrupted because you have been able to stay in the room, and the patient has been given no occasion to resent the use of his time for someone else or the interruption of his examination or treatment.

Use your telephone to make friends for the doctor. An important part of his practice is handled over the telephone, and courtesy is essential. We

are naturally courteous in our personal contacts, but sometimes we fail to show the same courtesy over the telephone. Every office has telephone rules. Your doctor has carefully instructed you as to the method he prefers to have you use in receiving calls, and as to whether or not he is to be interrupted while he is with a patient, what calls take precedence over others, how messages are to be taken for him, and where he may be reached outside of office hours in case of emergency. Use the telephone properly and it will work for you.

Here are ten suggestions for better telephone usage:

1. **ANSWER PROMPTLY.** Promptness is pleasing to the caller, and he appreciates the attention.
2. **IDENTIFY YOURSELF.** Saying "Hello" is like saying "Guess who!" Be up to date. "Good morning, Dr. Jones' office, Miss Smith speaking" is friendly and raises no question in the mind of the caller. He knows he has the number that he called, and he knows to whom he is speaking.
3. **SPEAK CLEARLY.** Speak directly into the mouthpiece, holding it about one inch from your lips and using a well-modulated voice. A whisper, if properly controlled and directed, is more effective than a loud voice. Do not garble your words by holding a cigarette between your lips while talking. Sounds of chewing are amplified over the telephone. We do not talk with a mouth full of food at the dinner table, and our courtesy should extend to the telephone. The snapping of chewing gum is one of the most ill-mannered and disconcerting sounds one can hear.
4. **TALK PLEASANTLY.** First impressions are important. Make patients feel welcome by putting a smile into your voice. Have you ever tried standing in front of a mirror and saying "Hello" with a smile on your face? Try saying it with a frown, and hear the difference. Your attitude shows in your voice.
5. **BE PREPARED.** Have a pad and pencil beside each telephone. The patient will be impressed with your efficiency and will appreciate not having to wait while you hunt for something to write with or on, or not having to repeat the information he has already given you.
6. **GET THE CALLER'S NAME.** Also be sure to

get the correct spelling of his name if it is not a common one, the telephone number where he may be reached, and whatever other facts may have a bearing on his call. Verify your notes with him to be sure that you have the correct information.

7. **BE CONSIDERATE.** Each patient believes that his problem is important and serious. His complaints may seem trivial to you, but you must not be indifferent or critical. His anxiety may be greater than his pain, and your sympathetic listening and kind word constitute good public relations.
8. **EXPLAIN DELAYS.** If you need to ask the caller to hold the line for a moment, give him a reason for doing it. If there is to be a longer delay, offer to return his call, and do so as soon as possible. Thank the patient for his courtesy, and he will appreciate yours.
9. **END CHEERFULLY.** Say "Goodbye" pleasantly, using the caller's name when convenient, *and let him hang up first*. Last words make a lasting impression. Do not let him think you were in a hurry to get rid of him.
10. **BE BUSINESSLIKE.** Give the caller your whole attention and interest, but avoid prolonged conversations. The patient who is waiting in the office also deserves your attention.

Remember that your telephone conversation represents your doctor as well as yourself. The quality of the medical service he renders is not the only foundation for his reputation in the community. The impression you make with your pleasant and helpful use of the telephone increases good will towards him as an individual physician, and creates good public relations for the medical profession as a whole.

—HELEN G. HUGHES

Physical Activity Is Important for Asthmatic Boys

Regular exercise and participation in the ordinary games of childhood are an important part of treating young boys with bronchial asthma, two University of Texas researchers contend. A pilot study of the effect of exercise on asthmatic youngsters was reported by Thomas R. McElhenney, M.D., and Kay H. Petersen, Ph.D., in the July 13, 1963 issue of J.A.M.A.

Twice a week for four months, 20 boys from eight to 12 years of age took part in an activity program designed to increase gradually the time and effort required to develop strength, endurance and skill, and to provide individual instruction and encouragement to practice basic body skills, the authors said. The activities included calisthenics, simple games, relays, and later competitive lead-up games to softball, basketball and volley-

ball, as well as tumbling, the rudiments of weight training and swimming.

"The results of this four-month pilot study were very encouraging to the boys, their parents and the authors, as each of the 20 boys showed improvement, some more than others," they reported. The lung capacity of 14 boys was measured prior to and at the end of the program, and the average increase in vital capacity was 18 per cent.

There also was an approximate 30 per cent reduction in the number and severity of asthmatic attacks and an equivalent diminution in the need for symptomatic drug therapy. One of the most satisfying aspects of the study was providing a chance for these boys to compete successfully, thereby transforming them from "watchers" to "doers."

The authors recommended that school boards create remedial or adapted programs of physical education for all children in the community who are "below par," including asthmatic children.

Iowa's High Syphilis Rate Continues

A greater than usual number of syphilis cases is certain for Iowa again this year, Dr. Ralph H. Heeren, of the State Department of Health, told the press on July 3. Up to that date, 19 cases of infectious syphilis had been reported to the Department. "The number of cases shot upward in 1962, when Iowa had 47 cases," he said, "and the trend is continuing this year. In the preceding five years, Iowa had an average of only 18 cases a year."

Although the Iowa rate is increasing rapidly, this state still compares favorably with the surrounding ones, and its rate is below the national average. There were 20,000 cases of infectious syphilis reported in the United States in 1962, he said.

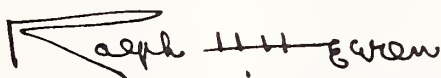
The total of reported syphilis cases in Iowa last year was 94, but that number includes all types. Some of the patients had had the disease for years.

Of the 47 cases of infectious syphilis reported in Iowa last year, Dr. Heeren said that about 65 per cent involved persons under 21 years of age. "There is no pattern on where syphilis is reported," he commented. "We have as many cases from rural areas as from the cities."

The Department of Health has films about venereal diseases and their consequences that it lends to schools as a means of acquainting young people with these perils. It requires that a nurse or a physician be present at each showing to answer students' questions. About 80 schools requested the films last spring.

Dr. Heeren went on to say that there were 1,347 cases of gonorrhea reported to his Department last year, or about the same as in the previous three years, but in 1957 there were only 722. "Many cases of gonorrhea are not reported to us," he commented.

STATE DEPARTMENT OF HEALTH



RALPH H. HEEREN, M.D., ACTING COMMISSIONER

Precautions in the Use of Insecticides*

The following safeguards are for the protection of the ultimate consumer of food crops and animal products, and for the protection of honey bees, fish and wildlife, as well as of handlers of insecticides and treated plants.

Insecticides are poisonous. They should be used only when needed, and should be handled with care. Users should follow the directions and heed all warnings printed on the labels of containers. Insecticide receptacles should be kept closed and clearly labeled, and should be stored in a dry place where they will not contaminate food or feed, and where children and pets cannot reach them.

PROTECTION OF PERSONS USING INSECTICIDES

In handling any insecticides, one should avoid repeated or prolonged contacts between such materials and his skin, and should avoid inhaling dusts or mists containing them. He should wear clean, dry clothing, and should wash his hands and face before eating or smoking.

Insecticides such as Aramite, calcium arsenate, chlorbenside, Chlorobenzilate, cryolite, DDT, DDVP, Dilan, Dipterex, Dylox, Fenson, Genite 923, Kelthane, lead arsenate, Lethane 384, lime sulfur, malathion, metaldehyde, methoxycor, naled, ovex, paradichlorobenzene, paris green, Perthane, pyrethrins, pyrethrum, ronnel, rotenone, ryania, sabadilla, Sevin, Strobane, sulfur, Sulphe-none, TDE, tetradifon and Thanite can be used safely without special protective clothing or devices, provided that they are in dilute dusts or water sprays. However, most concentrates and oil solutions require special precautions. Concentrated naled produces skin irritation. When handling or mixing concentrates of any insecticide, one should avoid spilling them on his skin and should keep them out of his eyes, nose and mouth. If any is spilled, he should wash it from his skin and change his clothing immediately. If it gets into his eyes, he should flush them with plenty of water for 15 minutes and get medical attention.

Harmful quantities of such insecticides as aldrin, Baytex, BHC, chlordane, Ciodrin, Co-ral, Delnav, diazinon, dieldrin, dimethoate, dinitrobutylphenol,

dinitrocresol, dinitrocyclohexylphenol, endosulfan, ethion, ethylene dichloride, heptachlor, lindane, Ruelene, toxaphene, and V-C 13 can be absorbed directly through the skin. When one is working with such insecticides, in any form, he should take the same precautions as with concentrates.

DD-Mixture, demeton, Di-syston, endrin, EPN, Guthion, methyl bromide, methylparathion, Methyl Trithion, nicotine sulfate, parathion, phorate, Phos-drin, phosphamidon, schradan, Telone and TEPP are extremely poisonous and may be fatal if swallowed, inhaled or absorbed through the skin. Carbophenothion is highly toxic if inhaled or swallowed. These highly toxic insecticides should be applied only by a person who is thoroughly familiar with their hazards and who will assume full responsibility for their safe use and will comply with all the precautions printed on the labels. He should reduce the danger of skin exposure by wearing protective clothing and equipment as specified on the container label. If it is called for, he should wear a respirator or mask of a type that has been tested by the U. S. Department of Agriculture and found to be satisfactory for protection against the particular insecticide that is to be used. Full-face masks are needed under certain conditions. They should always be worn by persons applying insecticides as aerosols in greenhouses, and often by persons loading insecticides into aircraft or applying them from aircraft. A current list of acceptable respiratory protective devices may be obtained from the Entomology Research Division, Agricultural Research Service, Beltsville, Maryland.

Methyl chloride gas used as a propellant in greenhouse aerosols and the liquid carbon disulfide are both flammable and explosive. They must never be used near heat or fire in any form, or left in open containers where there is little circulation of air and where the personnel are not wearing adequate face masks. Ethylene dibromide should not be transferred from one container to another in a closed room, and its fumes must not be breathed.

PROTECTION OF PERSONS HANDLING TREATED PLANTS

Those who must transplant or otherwise handle plants within five days after treatment with endrin, demeton, Di-syston, Guthion or parathion, or within one day after treatment with methyl parathion or Phosdrin, should protect their skin

* From Agriculture Handbook No. 120, Agricultural Research Service and Federal Extension Service, U. S. Department of Agriculture, 1963.

by wearing clean, dry cotton gloves. If the gloves become wet, they must be replaced by clean, dry ones. Those who must work in close contact with treated crops, as in thinning or harvesting, should also wear clean, tightly-woven clothing.

TREATMENT FOR POISONING

If an insecticide has been swallowed, induce vomiting by giving one tablespoonful of salt in a glass of warm water, and repeat until the vomit fluid is clear or until the odor of solvent is gone. Have the victim lie down and keep quiet. If a concentrate or oil solution has been spilled on the skin, remove contaminated clothing and wash the skin with soap and water. If a person suddenly feels sick while using an insecticide or shortly afterward, he should seek immediate medical attention. In all cases the patient should make the pesticide container and any attached labels available to the physician. In many cities there are Poison Control Centers that have information concerning symptoms and treatment of cases of actual or suspected poisoning by pesticides. Consult your local telephone directory, and if you cannot obtain this information locally, call the U. S. Public Health Service at Atlanta, Georgia, or Wenatchee, Washington.

PROTECTION OF HONEY BEES, AND FISH AND WILDLIFE

To minimize losses of honey bees and other pollinating insects, one should make insecticide applications, when possible, during hours when the insects are not visiting the plants. He should avoid drift into bee yards and adjacent crops in bloom. Growers should notify beekeepers at least 48 hours before dusting or spraying large acreages, so that measures can be taken to protect the bees. To protect fish and wildlife, one should be careful not to contaminate streams, lakes or ponds with insecticides. Do not clean spraying equipment or dump excess spray material near such water.

AVOIDING HARMFUL RESIDUES ON OR IN FOOD AND FEED

Residues in excess of established tolerances can be avoided by applying only those insecticides specified for use on the crop or livestock, and by following indicated schedules. Users should not exceed the recommended dosages. They should observe carefully the established safety restrictions, especially the required interval between the last application and a harvest or feeding, and between the last application and slaughter of animals. They should avoid drift of insecticide sprays or dusts to nearby crops or livestock, especially from applications by airplanes or other power equipment. They must not allow poultry, dairy animals or meat animals to feed on plants or drink water contaminated by a drift of insecticides.

Byproducts from a number of crops treated with insecticides may be safely fed to livestock or poultry if the crops have been harvested or fed after the specified waiting period. However, byproducts from some crops treated with certain insecticides may contain insecticide residues that will appear in meat, milk or eggs in excess of established tolerances. Before use, corn or other ensilage, alfalfa threshings, bean and pea vines, sugar-beet pulp and tops, etc. should be tested for safety.

Use of Insecticides on Dairy Farms

The following insecticides are regarded as safe for use in the locations indicated. The list does not include all of the insecticides available for use, and should serve only as a guide. When spraying in the milk house, the dairyman should be certain that all covers are in place on the bulk milk tank to protect the milk, and that all milking utensils are inverted or otherwise protected from the spray. He should read and follow the directions on the labels of all insecticides being used, and he should remember that all insecticides are poisons and must be used with care.

Spray	Barns			Out- side Build- ings	Milk Houses			On Cows
	Residual	Baits	Cords		Residual	Space Spray	Cords	
Baytex				Yes				
Ciodrin								Yes
DDVP		Yes		Yes		Yes		Yes
Diazinon	Yes	Yes	Yes	Yes	Yes		Yes	
Dimethoate	Yes			Yes	Yes			
Malathion	Yes	Yes		Yes		Yes	Yes	Dust only
Methoxychlor								Dust only
Parathion			Yes				Yes	
Bayer 29493				Yes				
Pprethrins with						Yes		Yes
a. MGK 264						Yes		Yes
b. MGK R-11						Yes		Yes
c. MGK R-326						Yes		Yes
d. Crag						Yes		Yes
e. Tabatrex						Yes		Yes
Rotenone								Yes
Ronnell								
(Korlan)	Yes	Yes			Yes			
Naled	Yes	Yes		Yes				

Remember that the prime factor in any effective fly-control program is the elimination of fly breeding sources through the application of basic sanitation practices on the farm.

Trivalent Oral Polio Vaccine

The licensing of a three-in-one Sabine live, oral, poliovirus vaccine was announced on June 26 by Luther L. Terry, Surgeon General of the U. S. Public Health Service. The trivalent poliovirus vaccine is designed to confer simultaneous immunity against all three types of polio. It will be produced and marketed by Lederle Laboratories, of Pearl River, New York—one of the three firms licensed for the monovalent polio vaccines, Sabin Types 1, 2, and 3.

The new product, to be given in two doses eight weeks apart, is a balanced combination of the three monovalent vaccines; that is, the amount of each strain included is based on the characteristics of the virus strains and on their combined action. In order to obtain a mixture that will produce a favorable “take” for all three types of polio, considerably more of the Types 1 and 3 vaccines are included than of the Type 2.

The vaccine has been extensively tested in accordance with federal regulations. It has been found to induce antibodies in at least 90 per cent of those who completed the two-dose schedule.

“The main advantage of a trivalent live poliovirus vaccine,” Dr. Terry pointed out, “is that there is no need to keep track of the separate types of vaccines administered—a potentially confusing situation for health authorities and vaccinees alike. Moreover, in a community where the population already possesses some degree of immunity, even a single dose of the trivalent vaccine would confer some immunity to all types of polio.”

Doctors Asked to Keep Drug Records for Use in Birth-Defects Study

An editorial in the July 20 issue of J.A.M.A. urges physicians to begin keeping records of all medications administered or prescribed to expectant mothers, including non-prescription drugs, to help determine the causations of birth defects. The editors acknowledged that they were asking doctors to undertake “a big task . . . especially if the records are to be kept so that complete information can be retrieved.” However, they said that at present there is no easier way to ascertain the possible influences of drugs on congenital deformities.

Animal experiments are “too likely to give false answers, either negatively or positively,” they said, “and human studies after the birth of a deformed infant are notoriously unreliable.”

“The recent literature is replete with after-the-fact reports of congenital abnormalities in infants whose mothers had taken one or another drug during pregnancy,” the editorial continues. “Such

reports supply numerators without denominators, in that they do not record the number of cases in which the drug is *not* attended by abnormalities; neither do they take into account the ‘natural’ incidence of malformations. Furthermore, they are otherwise dependent upon one of the most fallible of mental functions—memory.”

“Conscientious physicians who undertake this task will do honor to the mission of their profession,” the editorial declared.

Morbidity Report for Month of June, 1963

Diseases	June 1963	May 1963	June 1962	Most Cases From These Counties
Diphtheria	0	0	0	
Scarlet fever	188	292	170	Dubuque, Jefferson, Johnson
Typhoid fever	0	0	1	
Smallpox	0	0	0	
Measles	790	901	1002	Dubuque, Scott, Wapello
Whooping cough	6	6	5	Polk, Scott
Brucellosis	13	10	13	Madison, Scott
Chickenpox	444	374	100	Dubuque, Jones, Pottawattamie, Scott
Meningococcic meningitis	0	1	0	
Mumps	189	222	231	Des Moines, Polk, Pottawattamie, Scott
Poliomyelitis	0	0	0	
Infectious hepatitis	41	37	63	Black Hawk, Polk, Scott, Tama, Woodbury
Rabies in animals	41	37	32	Black Hawk, Jefferson, Linn, Muscatine, Poweshiek, Story, Webster
Malaria	0	1	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	52	27	26	For the state
Syphilis	84	64	101	For the state
Gonorrhea	128	89	141	For the state
Histoplasmosis	5	6	3	Polk
Food intoxication	0	25	48	
Meningitis (type unspecified)	5	2	0	Pottawattamie
Diphtheria carrier	0	0	0	
Aseptic meningitis	1	1	1	Polk
Salmonellosis	12	3	6	Johnson, Polk
Tetanus	0	1	1	
Chancroid	0	1	0	
Encephalitis (type unspecified)	1	0	1	Woodbury
H. influenzal meningitis	1	0	0	Des Moines
Amebiasis	1	1	2	Louisa
Shigellosis	2	1	3	Dubuque, Polk
Influenza	0	3	0	



Woman's Auxiliary News



Auxiliary Contributions to the AMA-Education and Research Foundation

It was indeed a pleasure for me to be present for the Annual Luncheon in honor of the Past Presidents of the Woman's Auxiliary to the American Medical Association, when Mrs. William G. Thuss, Auxiliary president, presented a check for \$278,410.35 to Dr. Raymond McKeown, AMA-ERF president.

This contribution was \$34,513.13 greater than the 1962 contribution—a 14.4 per cent increase. This was the first year in which Auxiliary funds were given to the AMA loan program.

The award for the largest contribution by a state went to Ohio, with a total of \$33,702.52. Tennessee had the largest per capita contribution—an average of \$11.95. These two states tied for the Gastineau Trophy.

California showed the largest dollar increase over 1962, \$9,803.37, and IOWA showed the greatest percentage gain, with an increase of 245.99 per cent.

—MRS. A. C. RICHMOND

The AMA Auxiliary Convention

It was a privilege for me to be an Iowa delegate to the Medical Auxiliary Meeting in Atlantic City. I only wish I had the words to bring back to my state and county the enthusiasm expressed at this convention.

From the first stimulating Sunday evening "Physician-Clergy-Patient" talks by Edward Rynearson, M.D., of Mayo Clinic, Right Reverend Bishop Fulton J. Sheen, of New York, and Reverend Doctor Paul B. McCleave, director of the AMA Department of Medicine and Religion, the convention proceeded with ever-increasing interest.

The Medical Self-Help program is a challenge for our county Auxiliaries. Mrs. H. Frederick Stephens, chairman of the Committee on Civil Defense, presented this under the title "Service—the Auxiliary Goal." Families must be taught to care for themselves in time of disaster—not just until the doctor comes, but because the doctor cannot come. They should learn first aid, home nursing, fall-out protection, mass feeding and fire drills. There is too much apathy about Civil Defense.

Our members can help stimulate shelter programs, and can help stock shelters with food, water and medical supplies. The Department of Agriculture is conducting research on the effects of radiation on living matter, i.e., on our food materials. We can keep our civic organizations in touch with its findings.

Parents have their children immunized against diseases, but they neglect themselves. Here is where our members can tell the story of the wisdom of adult immunization against tetanus, typhoid, polio, smallpox, etc.

I was especially impressed by the report given to the Auxiliary by Dr. William B. Walsh, president of People to People Health Foundation, Inc., about "Project Hope." *Hope* is an American hospital ship which is shuttling back and forth among ports in the underdeveloped countries of Latin America and Asia. So far, 300 doctors from 40 states in the Union have devoted some of their time to this service. These men have made the project succeed.

The ship *Hope* brings hope, mercy, and knowledge, and teaches people to help themselves. In the Far East and Latin America, there is a lack of health personnel in all fields. The life span in India is just 31 years; in Latin America it is only 24 years.

We have based our efforts on the dollar sign; but these people must have knowledge if they are to use our dollars wisely. *Hope* has something that can reach everyone, for some of these places have only one doctor to care for half a million people. The people of these lands must be taught on every level, so they can care for themselves. They need care *now*, so they can have hope for tomorrow.

Hope as a community ship has everything, and it is self-sufficient. It carries a piece of the United States wherever it goes. If our physicians work in native hospitals, they must work under the local standards, but if they bring the native doctors and nurses onto our ship *Hope*, they can teach them American standards, and get them to follow our example.

The native nurses never worked at night, and thus when they left to go home, the patients were chained to their beds until morning. By working with the American nurses, these girls have learned to do as we do.

Native doctors cannot change these things by themselves, but the hospital ship *Hope* provides

an example of the facilities they need, and helps to convince their governmental authorities to spend the necessary money.

Hope went to Peru, where anti-American feeling was intense; one doctor was threatened with violence, if the ship came in. However, fewer than two dozen people met the ship, and within a month, local doctors and nurses were working with our personnel. Thirty per cent of the people had active tuberculosis, and children were dying from measles, mumps, and polio. They were being treated apathetically.

In Trujillo, the Hope staff left behind them a new hospital, built by natives and well staffed. The Americans started a new cataract clinic, for there were 27,000 operable cases. Medical students were trained for this operation, since there were no surgeons available, and the facility is now run by 14 Peruvian doctors. Just a year earlier this clinic had not existed. In addition, the Americans trained anesthetists and hospital maintenance men and workmen of all other kinds.

Dr. Walsh asked the Auxiliary members to convey his thanks to their husbands, and ended with the adage: "Knowledge does not wither with age; with Hope comes peace."

—MRS. HOWARD WEIS

REPORT OF TUESDAY MORNING SESSION

The Tuesday morning sessions opened with Mrs. Robert Dunlevy, chairman of the Program Committee, presiding. The first presentation, entitled "Telling Our Story to the Public," was given by Mrs. Muriel Fox Aronson, who is a doctor's wife and is herself a vice-president of Carl Byoir and Associates, one of the leading public relations agencies in the country. She said that we must do all we can to improve the doctor image by working together and not being afraid to let another one or two occupational or professional groups get more publicity. Through improvements in the images of the few, all increase in stature.

It is a well-known fact that doctors, being busy, do not write enough letters such as congratulations to patients, and sympathy notes to friends and relatives of patients. Above all, she stated that any and all complaints that have been addressed to a physician should be answered in a calm and friendly manner. Mrs. Aronson suggested that the doctor's wife might take care of all this correspondence.

Finally, Mrs. Aronson emphasized the importance of being well informed.

In his address to the Auxiliary, Mr. Robert Riley, editor of *AMA NEWS*, said that the news that one presents to readers must really be news. All reports should be timely, interesting and important. Members of the AMA are devotees of brevity, and news of Auxiliary activities must fit this pattern, if physicians are meant to read it.

Mrs. John Wagner, chairman of the National Auxiliary's Publications Committee, stressed the fact that we in the Auxiliary must use the *BULLETIN* and all of the other tools of our organization. Not enough use is being made of these publications at the present time.

Also, since we doctors' wives are constantly asked to spend our time on important projects, we must learn to "put first things first."

We in Auxiliary must not hesitate to tell of our failures as well as of our successes. From failures we all learn "how not to do it."

Thank you for the privilege of being a delegate to the Fortieth Annual Convention.

—MRS. A. C. RICHMOND

TO SIN BY SILENCE

"To sin by silence when they should protest, makes cowards of men." This quotation from Abraham Lincoln was the theme of Dr. Edward Annis, the newly-installed president of the American Medical Association, in his address to the House of Delegates of the Woman's Auxiliary to the AMA.

Persons who refuse to participate in representative government are irresponsible citizens, and failures to themselves, their families and their country. "Being too busy," Dr. Annis said, "is no excuse to shirk our responsibilities as citizens." Too often we hear the excuse, "I planned to vote today, but I got too busy," or "I should have taken time to vote, but one vote won't be missed." Dr. Annis reminded his audience that one vote per precinct won the 1960 elections, and that the responsible citizen takes the time to vote.

Recognizing that the physician has many demands on his time, and that in keeping abreast of the rapid advancements in medicine his reading time is, of necessity, confined to scientific journals, Dr. Annis suggested that the physician's wife assume responsibility for bringing public-affairs issues to his attention.

He urged physicians' wives to work actively to get medicine's story before the public, to invite guests to Auxiliary meetings, and to participate in the activities of other organizations. He urged them to become active in political education and political action programs, and to increase their own knowledge and understanding of political issues. Only by speaking out and presenting the facts, can we combat the deliberate falsifications that are being fed to the American public.

"No one," he declared, "is as busy as he thinks he is." We must learn to put first things first, to forget our petty disagreements and to stand firmly united in the fight to preserve freedom for the practice of medicine.

We must be able to explain why medicine is costly, not only on the grounds that increased services are being provided but also on the grounds that the developing of new technics, new

drugs, apparatus such as heart-lung machines, artificial kidneys and preventive-medicine methods and materials requires great outlays of money. We need to speak of the five to six million persons who are alive today because of the advancement of medical knowledge and medical skill. We need to ask the individual what it means to him to be assured a longer and healthier life than his grandparents had.

All too often, Dr. Annis said, "the American public hears only one side in an argument—the side that makes a concerted effort to discredit American medicine. We must speak out and present the true facts to the public; we must see that our side of the story is heard!"

—MRS. HOWARD ELLIS

PRESIDENT'S INAUGURAL ADDRESS

Auxiliary members' service is the best possible communications to the layman, and "while we recognize that actions speak more loudly than words, the words which follow our demonstrations are important and better received," the new president of the Woman's Auxiliary to the American Medical Association said in her inaugural address.

In assuming the presidency, Mrs. C. Rodney Stoltz, Watertown, S. D., said that comprehension is the key to future success and that "our first need is to communicate with ourselves."

"If each one truly communicates, giving recognition to our aims, our program and our accomplishments, the Auxiliary will stand the test of scrutiny. We can and *should* invite scrutiny by our own members, by members of our medical societies, by potential members and by the public. One of the most overlooked aspects of evaluation is the process of being asked penetrating questions and being required to give considered answers," Mrs. Stoltz said.

"Our goal for the year is both to Serve And Communicate," she added. Mrs. Stoltz succeeds Mrs. William G. Thuss, Birmingham, Ala. The new president-elect is Mrs. William H. Evans, Youngstown, Ohio. Other Auxiliary officers installed at the 40th annual convention in Atlantic City include: Mrs. John M. Chenault, Decatur, Ala., first vice president; Mrs. Howard Lilijestrand, Honolulu, Hawaii, constitutional secretary, and Mrs. C. R. Pearson, Baraboo, Wis., treasurer.

Regional vice presidents are: Mrs. William Stone, Baltimore, Md., eastern; Mrs. Earl W. Roles, Prospect, Ky., southern; Mrs. Richard A. Sutter, St. Louis, Mo., north central, and Mrs. G. Prentiss Lee, Portland, Ore., western. Di-

rectors elected for two years are: Mrs. E. R. W. Fox, Coeur d'Alene, Ida.; Mrs. Lemuel C. McGee, Wilmington, Del., and Mrs. Morton Arnold, Windham Center, Conn.

Other convention highlights:

- Presentation of a special commendation to Donna Reed, television actress, for her portrayal of a doctor's wife. In accepting the award, Miss Reed said that she was particularly pleased that the award came from the segment of society which she and her fellow actresses tried to portray on their program.

- Presentation of a special health mobilization award—the first of its kind to a woman's organization. In making the presentation, Dr. Gabriel Ferrazzano, chief of the Public Health Service's Division of Health Mobilization, commended the Auxiliary for its outstanding nationwide service in civil defense.

- Dr. George Fister, then AMA president, praised the Auxiliary for its work and said that "if our past proclaims our future, then the finest form of medicine in the world will be preserved."

- Business sessions were devoted to state and national reports and speeches by Congressman Bruce Alger, Project HOPE President William Walsh, M.D., and AMA staff personnel.

- Total registration: 1,325.

Exasperating

*Hearing the phone's imperious shrills,
I drop the basket; the laundry spills.
I sprint from the clothesline, through the yard.
I rip through the back porch, breathing hard;
On through the kitchen . . . Oops! Don't fall! . . .
Make a fast corner and scoot down the hall.
Skid on a throw rug, trip on the pup;
And gasp, "Hello!" . . . and they've hung up!*

—Allamakee Auxiliary

Have you moved in the past few months?
PLEASE send any changes of address to 529-36th Street, Des Moines 12. Communication is a necessity: Do help us keep our mailing list up to date. You are our best source of accurate information.

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PAPERS FROM MERCY HOSPITAL MEDICAL DAY

"Medical Approaches to the Control and Prevention of Atherosclerosis"—W. E. Connor, M.D., page 585

"Medical Therapy in Specific Categories of Ischemic Cerebrovascular Disease"—R. G. Siekert, M.D., page 594

"Radiologic Diagnosis of Vascular Disease"—Karl A. Youngstrom, M.D., page 598

"Surgical Treatment of Arteriosclerosis"—E. S. Crawford, M.D., and M. E. DeBakey, M.D., page 606

"The Radiation Hazard"—Edward Teller, Ph.D., page 629

IMS Area Meetings Re: Society and Blue Shield Projects

1. **Tuesday, September 24: Storm Lake** (Buena Vista, Carroll, Cherokee, Ida and Sac Counties)
2. **Wednesday, September 25: Sioux City** (Crawford, Monona, Plymouth, Sioux and Woodbury Counties)
3. **Thursday, September 26: West Lake Okoboji** (Clay, Emmet, Dickinson, Lyon, Osceola, O'Brien, Palo Alto and Pocahontas Counties)
4. **Tuesday, October 1: Davenport** (Clinton, Muscatine and Scott Counties)
5. **Wednesday, October 2: Burlington** (Des Moines, Jefferson, Henry, Lee, Louisa, Van Buren and Washington Counties)
6. **Thursday, October 3: Ottumwa** (Marion, Maquoketa, Keokuk, Lucas, Monroe, Wapello, Wayne, Appanoose and Davis Counties)
7. **Tuesday, October 8: Creston** (Adair, Adams, Madison, Union, Taylor, Clarke, Decatur and Ringgold Counties)
8. **Wednesday, October 9: Council Bluffs** (Harrison, Shelby, Audubon, Pottawattamie, Cass, Mills, Montgomery, Fremont and Page Counties)
9. **Tuesday, October 15: Cedar Rapids** (Linn,

Jones, Johnson, Cedar, Benton and Iowa Counties)

10. **Wednesday, October 16: Dubuque** (Delaware, Dubuque and Jackson Counties)

11. **Thursday, October 17: West Union** (Howard, Winneshiek, Allamakee, Chickasaw, Fayette and Clayton Counties)

12. **Tuesday, October 22: Marshalltown** (Marshall, Tama, Jasper and Poweshiek Counties)

13. **Tuesday, October 29: Des Moines** (Story, Boone, Dallas, Guthrie, Polk and Warren Counties)

14. **Wednesday, October 30: Fort Dodge** (Webster, Calhoun, Hamilton, Greene, Kossuth and Humboldt Counties)

15. **Thursday, October 31: Mason City** (Hancock, Winnebago, Worth, Cerro Gordo, Wright, Franklin, Mitchell and Floyd Counties)

16. **Tuesday, November 19: Waterloo** (Hardin, Grundy, Black Hawk, Butler, Bremer and Buchanan Counties)

For more detailed information, see pages 650 and 651.

ANNUAL FALL CONFERENCE OF COUNTY MEDICAL SOCIETY OFFICERS AND OTHER REPRESENTATIVES

Hotel Savery, Des Moines, September 18, 1963

SEPTEMBER, 1963



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or form
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therapeutic preparations, and allergic transfusion reactions;
postoperative nausea and vomiting, nausea of preg-
nancy, motion sickness, parkinsonism and drug-induced
pyramidal reactions, and quieting emotionally disturbed
children. Parenteral administration is indicated where, in the
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oral therapy would be inadequate. **Precautions:** Avoid
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greater than 100 mg. should be avoided, particularly in

hypertension and cardiac disease. Persons who have become
drowsy on this or other antihistamine-containing drugs, or
whose tolerance is not known, should not drive vehicles or
engage in other activities requiring keen response while
using this product. Hypnotics, sedatives, or tranquilizers, if
used with this product, should be prescribed with caution
because of possible additive effect. Diphenhydramine hydro-
chloride has an atropine-like action which should be con-
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The JOURNAL of THE IOWA MEDICAL SOCIETY

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Scientific Articles

Medical Approaches to the Control and Prevention of Atherosclerosis

WILLIAM E. CONNOR, M.D.
Iowa City

THE TERM *epidemic* is usually applied to outbreaks of infectious disease, yet in twentieth century America disorders caused by atherosclerosis have become epidemic in character. Coronary heart disease, the most common clinical manifestation of atherosclerosis, produces at least one-fourth of all deaths in the United States and is especially lethal in the male sex. Once an epidemic is recognized, the most important question is how may it be prevented and controlled. The knowledge necessary to prevent serious atherosclerotic disease has been accumulated by many investigators over the past decade. My purpose in this paper is to review the available information in this area and to point out possible methods by which atherosclerosis may be controlled.

CLINICAL FEATURES OF THE DISEASE

The lesion of atherosclerosis is illustrated in Figure 1. This section of an almost completely obstructed left coronary artery was taken from a 39-year-old man who died suddenly from coronary heart disease. It is apparent that the medical possibilities for treating this particular segment of coronary artery were minimal, since the vessel had been almost completely destroyed as an effective conduit of blood. A mass of fibrous and lipid-rich tissue had encroached upon the lumen

until its patency had been reduced to a mere slit.

Sudden death in this patient represents one common manifestation of coronary heart disease. Sudden death may occur either in a patient whose

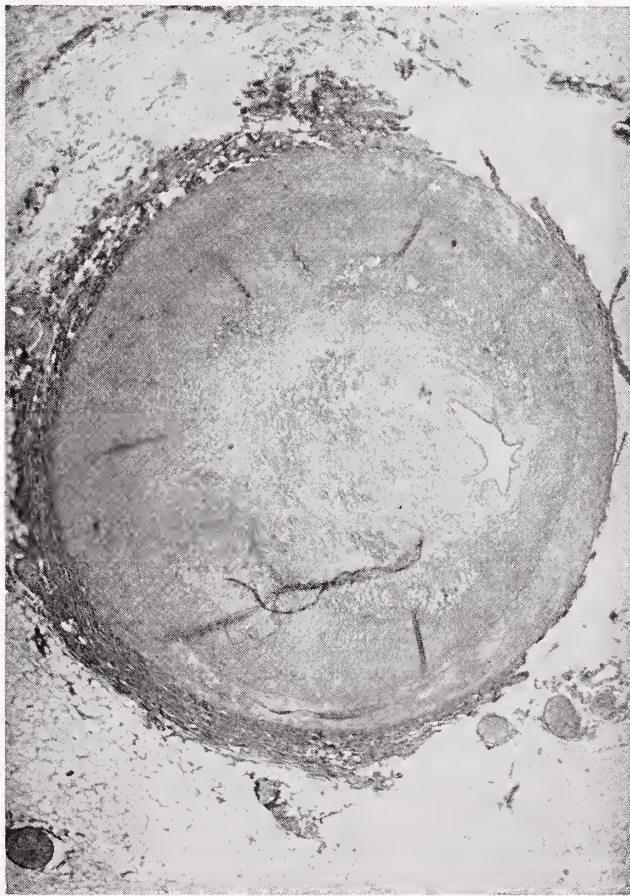


Figure 1. The microscopic section of the left coronary artery of a 39 year old man who died suddenly from coronary heart disease.

disease has already been recognized or in an apparently well individual. A second clinical consequence of coronary heart disease is myocardial infarction. A third common manifestation is angina pectoris. Over one-third of all individuals developing clinical manifestations of coronary heart disease for the first time will die suddenly or within the first three weeks following its occurrence.^{1, 2}

These features of coronary heart disease emphasize the necessity for prevention. Even when we recognize the disease in patients, we have before us the complicated problem of dealing with an already permanently damaged artery (as in Figure 1, for example). Obviously, treatment is not possible for the person considered in good health but who is suddenly and unpredictably stricken and dies within a few minutes' time. Such an individual never reaches a physician.

Atherosclerosis in other organs of the body pursues a similar course. Its clinical manifestations appear suddenly, usually in previously well and productive persons. In the brain, atherosclerosis of the cerebral and carotid vessels manifests itself chiefly in the clinical syndrome of stroke. In the eye, retinal artery occlusion and blindness may occur. In the abdomen, either sudden or gradual occlusion of the superior and inferior mesenteric arteries leads to several clinical syndromes. These may run the gamut from intestinal malabsorption or the diagnostically perplexing entity of abdominal angina³ to outright gangrene of the bowel. In the kidney, renal artery occlusion may result from atherosclerosis and may produce a secondary and severe form of hypertension. In the lower extremities, intermittent claudication or gangrene may occur from atherosclerosis of the distal aorta or of the iliac, femoral or other arteries. Thus atherosclerosis is a spotty yet diffuse disease, silent in healthy individuals until a catastrophe occurs.

THE ROLE OF CHOLESTEROL IN ATHEROSCLEROSIS

Chemical analyses of the constituents of the atheromatous plaque reveal, first and foremost, that it becomes progressively rich in lipids as it grows and enlarges⁴ (Table 1). Of the lipid sub-

stances which accumulate in the plaque, the total cholesterol increases most strikingly. The cholesterol content of the normal aorta was 0.4 per cent by weight. With grade 3 atherosclerosis, aortic cholesterol increased 16-fold, to 6.4 per cent.

The next question relates to the origin of the lipid in the atheromatous vessel. Previously, it has been thought that these lipids could arise from local synthesis within the arterial wall. Although it is true that most tissues of the body, the arteries included, have the capacity to synthesize cholesterol and other lipids, Zilversmit and others have conclusively shown that the amount of cholesterol in the atheromatous artery is too great to have been synthesized by the vessel wall itself.⁵ The rate of synthesis is much too slow.

Indeed, the use of radio-tagged cholesterol, both in experimental animals and in man, has shown rather conclusively that the lipid in the atheromatous plaque is derived largely from the blood stream.^{6, 7, 8} Figure 2 is a diagrammatic repre-

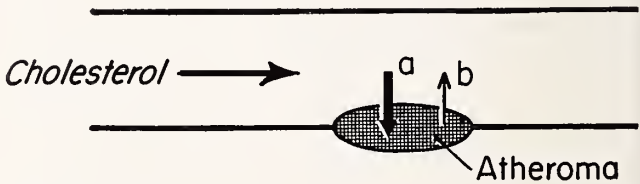


Figure 2. The movement of cholesterol from the plasma into and from the arterial wall. Atheroma results when the cholesterol entering the wall, the amount "a," exceeds the amount leaving the wall, "b."

sentation of an artery with a beginning atheromatous plaque, and a certain quantity of lipid labeled "a" entering the plaque and the quantity "b" leaving the plaque. As Newman has indicated, there is a flux of cholesterol between the blood and the arterial wall.⁶ The movement of cholesterol from the lesion occurs if the serum cholesterol concentration is lowered, and if the atheroma is not well advanced in structure and is not fibrotic. This process offers us some possibility for treating the disease.

It has been shown that the lipid in the atheromatous artery may be derived to a considerable extent from constituents in the diet. For example, radio-tagged cholesterol fed in the diet has been recovered in large quantities from atheromatous plaques.^{5, 7} Furthermore, other lipid-soluble substances consumed in the diet, such as the carotenoids or linoleic acid, are recoverable from atheromas. These substances are known not to be synthesized by the human body. Thus when they are found in atheromatous plaques, one can be certain that their point of origin was indeed the diet of the individual in question.

TABLE I

THE LIPID CONTENT OF THE HUMAN AORTA IN DIFFERENT STAGES OF ATHEROSCLEROSIS*

Stage of Aortic Atherosclerosis	Total Lipid	Total Cholesterol
	(% Dry Wt.)	
0	3.0	0.4
1	4.2	1.1
2	9.8	4.5
3	12.0	6.4

* After Böttcher.⁴

THE EPIDEMIC OF CORONARY HEART DISEASE

The attack rate of coronary heart disease has now been well documented in a study conducted by the United States Public Health Service in Framingham, Massachusetts. In that community of 30,000 people, some 5,000 individuals clinically free of cardiovascular disease were seen initially in the early 1950's and have now been followed for eight years in an attempt to find out how many of them would develop one or another of the manifestations of coronary heart disease. Table 2 illustrates the frequency of the development of this disease in men and women, in terms of new cases per thousand of population. It is apparent

TABLE 2
INCIDENCE RATE OF CORONARY HEART DISEASE IN THE SEXES OVER AN EIGHT YEAR PERIOD*

Age Range (Yrs.)	Number of Afflicted Individuals Per 1,000 of Population	
	Men	Women
30-39	24	1
40-49	66	20
50-59	131	67

* Data derived from the Framingham Study.¹

that men have a much higher incidence rate than do women in all age groups. In fact, this disease is rather rare in pre-menopausal women. Let us

translate these figures for men into terms of absolute frequencies in the development of coronary heart disease. In previously well men 50-59 years of age, one out of eight developed an attack of coronary heart disease within the six year period. In men aged 40-49, one of 15 individuals had such an incident, and in men aged 30-39, one out of 40. Recall, too, that one-third of all previously well persons who develop such an attack die suddenly or within three weeks of its onset.

The risk of coronary heart disease in men is illustrated in Figure 3. In the Framingham study, other factors besides age and sex were tabulated for these previously well individuals in an attempt to categorize more precisely the typical individual in whom coronary heart disease occurs. The first important characteristic was an elevation of the serum cholesterol concentration. The heights of these bar graphs simply indicate the risk probabilities in these individuals. Note that the higher the serum cholesterol, the greater the risk of coronary heart disease in these previously well individuals. For example, if the serum cholesterol was below 220 mg. per cent at the time the person was first seen, the risk was one-sixth as great as if the serum cholesterol had been over 260 mg. per cent.

The next important risk factor analyzed was the level of the systolic blood pressure. If this were high—above 180 mm. Hg—the risk of coronary heart disease would be four times greater than if the systolic blood pressure were below

Risk of Coronary Heart Disease

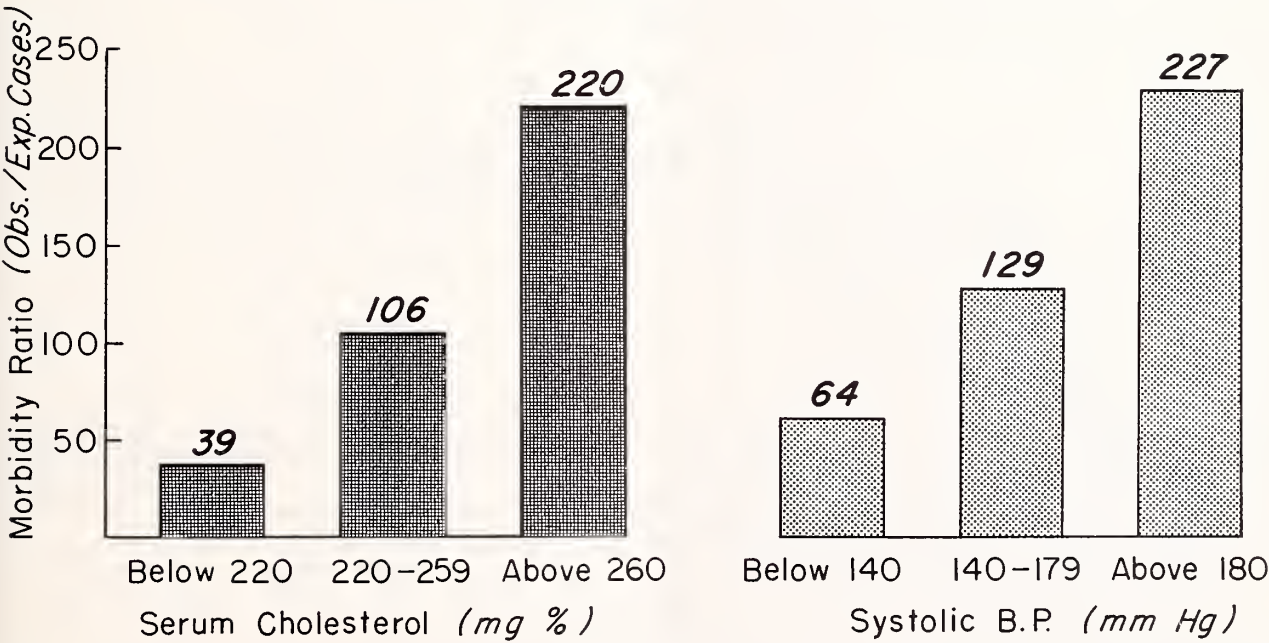


Figure 3. The risk of coronary heart disease correlated with the serum cholesterol level for men aged 30-49 and with the level of the systolic blood pressure for men aged 30-59. These data have been rearranged from the tabulations of the Framingham Study.^{1, 9} The "mortality ratio" relates observed cases versus expected cases.

140 mm. Hg. The risk was multiplied many-fold for individuals having both of these high-risk factors, i.e., elevation of the serum cholesterol and also high blood pressure.

Other high risk factors have included obesity and a positive family history of coronary heart disease and atherosclerosis. Clinicians have long recognized that coronary heart disease occurs in family constellations. What is also apparent is that there is little coronary heart disease in some families—families living in the same communities, eating the same kind of diet and subjected to similar environmental stress as those with a high incidence.

Table 3 shows the serum cholesterol concentrations of two vastly different Iowa families that we have studied. The three generations of family A have had persistently low serum cholesterol concentrations. There is no history of coronary heart disease in family A. On the other hand, family B has a strong history of coronary heart disease, with many episodes of sudden death. Most members of both sexes in this family have profound hypercholesterolemia—up to 580 mg. per cent in many individuals. This defect in lipid metabolism is inherited as an autosomal dominant. Some members have completely escaped the trait. Even the children of this particular family had high serum

cholesterol levels, suggesting that the defect appears very early in life. These families illustrate the long-standing clinical observation that there is a certain genetic predisposition to coronary heart disease and that there is also a familial immunity

TABLE 3
THE FAMILIAL INCIDENCE OF HYPER-
CHOLESTEROLEMIA

	Generations		
	1st	2nd	3rd (Children)
Family A	196*	180	179
(Coronary disease rare)		175	133
		235	
Family B			
(Coronary disease common)	580	457	432
		367	417
		290	379
		428	265
			258
			151
			186

* Each of these values represents the serum cholesterol level of a single individual.

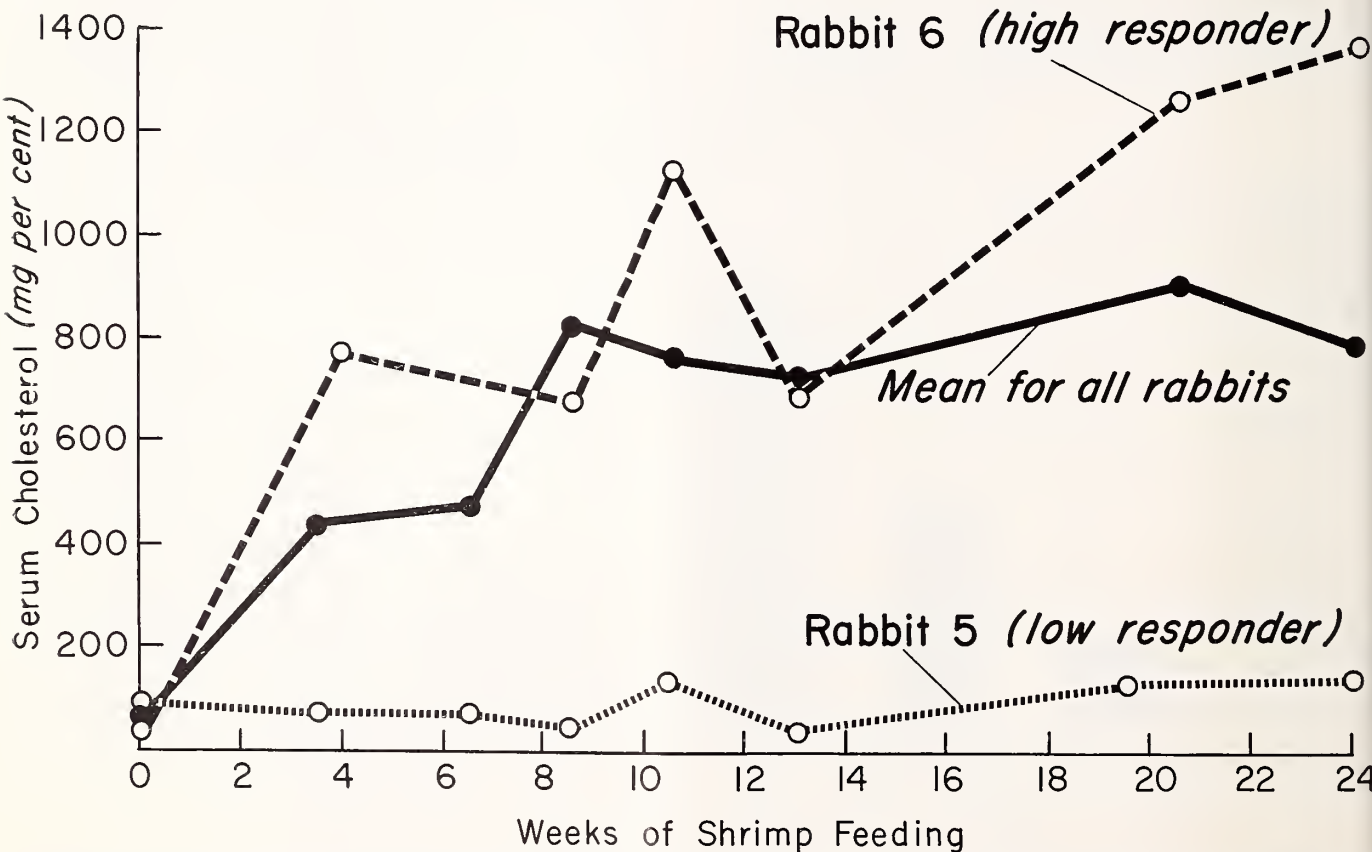


Figure 4. Serum cholesterol values obtained at intervals during a 24 week period of shrimp feeding.¹⁰ Mean values for all rabbits as well as examples of rabbits having widely differing responses are shown. (Reproduced with permission from the "Journal of Nutrition.")



Figure 5. A typical example of the aortic atherosclerosis which developed after 24 weeks of shrimp feeding.¹⁰ The upper portion of the thoracic aorta is most severely involved. The lower portion of the vessel in the region of the intercostal arteries has patchy lesions between small areas of normal intima. (Reproduced with permission from the "Journal of Nutrition.")

from coronary heart disease. Perhaps the mechanism of susceptibility may operate partially through the serum cholesterol concentration which a given family carries. Note, too, that family A and family B were typical American families eating diets similar in composition.

ANIMAL EXPERIMENTS

The varied susceptibility to coronary heart disease and atherosclerosis is illustrated in animal experiments as well. In Figure 4 are data taken from a feeding experiment in rabbits.¹⁰ These animals are most susceptible to the development of atherosclerosis and hypercholesterolemia when they eat foods containing cholesterol. In this experiment, rabbits were fed a mixture of normal rabbit chow plus shrimp. Shrimp was selected as a food additive because of its relatively high cholesterol content. Rabbits normally have low serum cholesterol concentrations—in the neighborhood of 50 mg. per cent—and do not develop atherosclerosis when consuming normal rabbit chow. However, as soon as these rabbits were given this shrimp additive, the mean serum cholesterol concentration of all rabbits increased greatly to the range of 700-800 mg. per cent.

The data obtained from two rabbits are of special interest. Rabbit No. 6 was a relatively high responder to this particular regimen. Rabbit No. 5, despite eating the same quantity of food and gaining weight during the experiment, responded very poorly in that its serum cholesterol rose only slightly over the base-line level. At autopsy, all

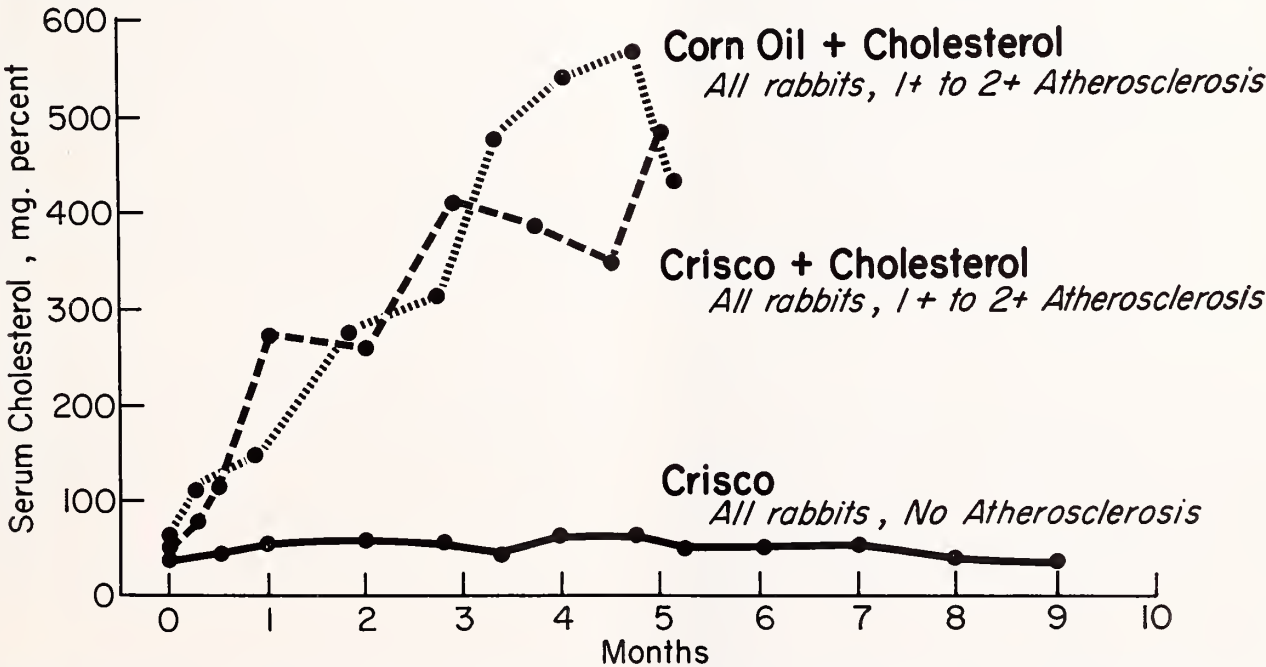


Figure 6. Response of rabbits to dietary cholesterol and fat. Each group of rabbits was fed a different diet: 18 per cent Crisco, 18 per cent Crisco plus 0.25 per cent cholesterol, and 18 per cent corn oil plus 0.25 per cent cholesterol. Aortas were examined for atherosclerosis and graded 1 to 4+. Fat, supplied at the 18 per cent level made up 40 per cent of the total calories. (Reproduced with permission from "Geriatrics.")

rabbits other than rabbit No. 5 had extensive atherosclerosis. Rabbit No. 5 had very little atherosclerosis. This information gives more emphasis to the previous observations, namely that the extent of atheromatous disease seems to depend upon the height of the serum cholesterol, and that there indeed is considerable individuality for both animals and human beings in their response to atherogenic diets.

Figure 6 illustrates the lesions produced in the aorta of a rabbit fed shrimp. This is a gross photograph of the intima of the aorta in a high responder. Note the relatively small areas of uninvolved intima, and the large, confluent atheromatous plaques forming throughout most of the vessel.

In experimental animals, at least two substances are usually necessary for the dietary production of hypercholesterolemia and atherosclerosis. These are cholesterol and fat. Cholesterol may be provided either as a purified food substance or in the form of foods containing cholesterol. In the study illustrated in Figure 6, the key role of cholesterol in the diet is emphasized¹¹ and contrasted with effects from dietary fat. Three groups of rabbits were fed different regimens: Crisco alone, Crisco + cholesterol, and corn oil + cholesterol. Crisco was used as an example of a fat which has been hydrogenated and is relatively saturated. Corn oil represents a highly unsaturated fat with a high content of polyunsaturated fatty acids. The group of rabbits fed Crisco plus normal rabbit chow had serum cholesterol concentrations which did not change during the nine-month period of the experiment. At autopsy no atherosclerosis was found in this group. When cholesterol was added to Crisco, prompt elevation of the serum cholesterol concentration occurred. At autopsy, 1 to 2+ aortic atherosclerosis was noted in all animals. In the corn oil plus cholesterol feeding, a similar degree of hypercholesterolemia and atherosclerosis occurred. Thus in the presence of cholesterol in the diet, polyunsaturated fat does not protect against the development of hypercholesterolemia and atherosclerosis.¹² "Saturated" fat in the diet produced little effect until cholesterol was added to the diet.

At this point, one might logically raise the question of how commonly the clinical manifestations of atherosclerosis, as seen in man, have been produced in experimental animals. The feeding experiments which I have outlined to you have been carried on for a relatively short period of time—considerably under one year. In man, however, the disease develops over many years, indeed over the lifetime. Recently, Taylor and others in Chicago have shown that the exact replica of the human disease—i.e., ischemic occlusion of the vessels—can be produced in monkeys.¹³ These workers fed monkeys a diet rich in cholesterol and fat, supplied as egg yolk and butter fat over a three-year period. The serum cholesterol concentrations of

these monkeys rose strikingly from the normal levels. Several of the monkeys developed ischemic lesions from atherosclerotic disease. In fact, one monkey died in an episode of pulmonary edema in the course of acute myocardial infarction. At autopsy, there was a fresh myocardial infarct, much the same as those seen in man. A coronary artery was occluded by an advanced atherosclerotic lesion.

In experimental animals, the following circumstances lead to clinically significant atherosclerotic disease. The inclusion of sufficient dietary cholesterol and fat in the nutritional scheme of the animal for a period of time will ultimately lead to an elevation of the blood cholesterol. If there is elevation for a long enough period of time, fatty streaks, the earliest form of atheroma, appear. This lesion, as McGill and others have shown, is the precursor of the advanced fibrotic lesion.¹⁴ Once fibrotic atherosclerotic disease has prevailed for a long enough period of time, then outright organ infarction may occur.

Thus in animals, to date, the exact replica of the human situation has been produced with amazing regularity. Other experiments have shown that myocardial infarction will develop in dogs, rabbits and rats with feeding regimes containing large amounts of fat and cholesterol. It is of special interest that in Taylor's experiment, monkeys which failed to respond to the dietary regimen of cholesterol and fat with an elevation of the blood cholesterol also failed to have much atherosclerosis at autopsy.

WORLD WIDE DISTRIBUTION OF ATHEROSCLEROSIS

The studies of many epidemiologists have revealed that severe atherosclerotic disease is rare in many parts of the world. Both clinical and autopsy evidence supports this idea. For example, in Japan coronary heart disease is most uncommon. The Japanese are a population group with a relatively high standard of living, an industrialized society, and a long life span. Similarly, when I had the opportunity to spend three months in Pakistan, I observed that coronary heart disease was rare in the poor-income groups of that country whose diets were relatively low in fat and cholesterol. Conversely, coronary heart disease was common in people in the high income brackets whose dietary pattern was similar to that of Americans. Japanese and the Pakistanis of low-income groups are also of interest in the light of the developing hypothesis in that they have low concentrations of serum cholesterol. Although they eat a diet relatively low in fat and cholesterol, their diet may be most adequate from a nutritional point of view when properly supplemented.

For the prevention of coronary heart disease in the United States, we might adopt the following hypothesis at this point. Low intakes of cholesterol and fat in the diet of Americans can lead to de-

creased concentrations of the serum cholesterol. Evidence for this statement will be given shortly. Low concentrations of serum cholesterol over a lifetime may then lead to a reduced incidence of coronary heart disease in Americans. Pertinent studies to test this premise are now being carried on in a number of clinical centers throughout the country, but, because coronary heart disease develops over a lifetime, the final answer to this particular question will not be available for a considerable period of time. Nevertheless, the crux of the issue seems to be in the control of the serum cholesterol concentration, on the basis of both animal studies and epidemiologic studies.

THE TREATMENT OF HYPERCHOLESTEROLEMIA

The serum cholesterol levels of most Americans are extremely labile and may be readily altered by dietary modification. For example, two studies of prison volunteers have indicated that the serum cholesterol will rise or fall 60 mg. per cent or more, depending upon the presence of cholesterol in the diet.^{15, 16} In fact, in many of these men, serum cholesterol levels decreased to almost the average range of the Japanese, 140 to 160 mg. per cent, with the consumption of a cholesterol-free diet. Experiments such as these—and there have been many of them—indicate that the serum cholesterol levels of Americans can readily be altered by dietary modification.^{11, 17}

Basically, there have been four different approaches that have been used for treatment of hypercholesterolemia and, indeed, for the control of coronary heart disease (Table 4). The first technic was used a number of years ago—a diet low in fat, an unpalatable diet, I must stress, and not readily consumed by patients or other individuals. It does indeed lead to a lowering of the serum cholesterol concentration. In practice, this kind of diet has not worked out. The second approach is a recent one. It is a diet high in polyunsaturated fats. This plan has the defect of not fitting the experimental evidence, in that animals fed polyunsaturated fat along with cholesterol have

developed hypercholesterolemia and atherosclerosis.¹² We do know that in some animals fed this particular regimen of polyunsaturated fat the serum cholesterol will fall, as it does in human beings, but the next question relates to where the cholesterol moves as it leaves the blood. Certainly some results indicate, as Gerson reported recently, that the cholesterol moves into the tissues, including arteries, of animals fed corn oil.¹⁸ This diet, then, may not be accomplishing the desired result in promoting the removal of cholesterol from the body. The use of drugs, hormones, and vitamins to lower the serum cholesterol level has been invariably unsatisfactory up to the present time. Either such agents have been ineffective or expensive, or they have produced unpleasant side effects or serious toxicity. The recent experience with triparanol provides an excellent example of drug toxicity, and this drug has been withdrawn from clinical use. Generally, the pharmaceutical approach has not been applicable to the control of lipid metabolism in high risk individuals in whom the objective is to prevent coronary heart disease. Time does not allow for a review of individual preparations in this paper.

Our own approach to hypercholesterolemia has been the low-cholesterol, moderately low-fat diet.^{11, 19, 20} The theoretical validity of this diet is buttressed by a mass of experimental data from animals, from human population groups, and from clinical studies in man reviewed in detail elsewhere.¹¹ It is truly a non-atherogenic diet. I know of no experimental work which would negate this premise. The constituents of this diet are compared in Figure 7 with the general American diet at the 2,400-calorie level. Clearly, if a dietary approach is to be used, the diet must be one that does not produce deficiency disease, and it must be nutritionally adequate. The low-cholesterol diet, for example, contains 75 Gm. of protein and is the same in this respect as the general American diet. This diet contains much more carbohydrate than the general American diet. Its fat content is reduced by one-half, of 53 Gm. versus 106 Gm. The most striking feature about this experimental diet is the limitation of dietary cholesterol from the usual American intake of about 800 mg. to 100 mg. per day.

Our results thus far are that 73 patients have consumed this diet for periods of from four to 35 months. The initial mean serum cholesterol levels of this group were high—316 mg. per cent. Obviously, this was a group of individuals who had hypercholesterolemia. The use of the low-cholesterol diet produced a prompt decline of the serum cholesterol to 227 mg. per cent, or a downward change of 91 mg. per cent. Patients with diabetes mellitus responded in a similar fashion.¹⁹

Which individuals should be treated by means of diet or another approach in order to prevent coronary heart disease? First of all, in the light

TABLE 4
THE TREATMENT OF HYPERCHOLESTEROLEMIA AND PREVENTION OF CORONARY HEART DISEASE

1. A low fat diet.
2. A diet high in polyunsaturated fat content.
3. Drugs, hormones, and vitamins.
Triparanol
Estrogens
Thyroid analogues
Nicotinic acid
Cholestyramine
Sitosterol
4. 100 mg. low cholesterol, moderately low fat diet.

Comparison of Different Diets (2400 Calorie)

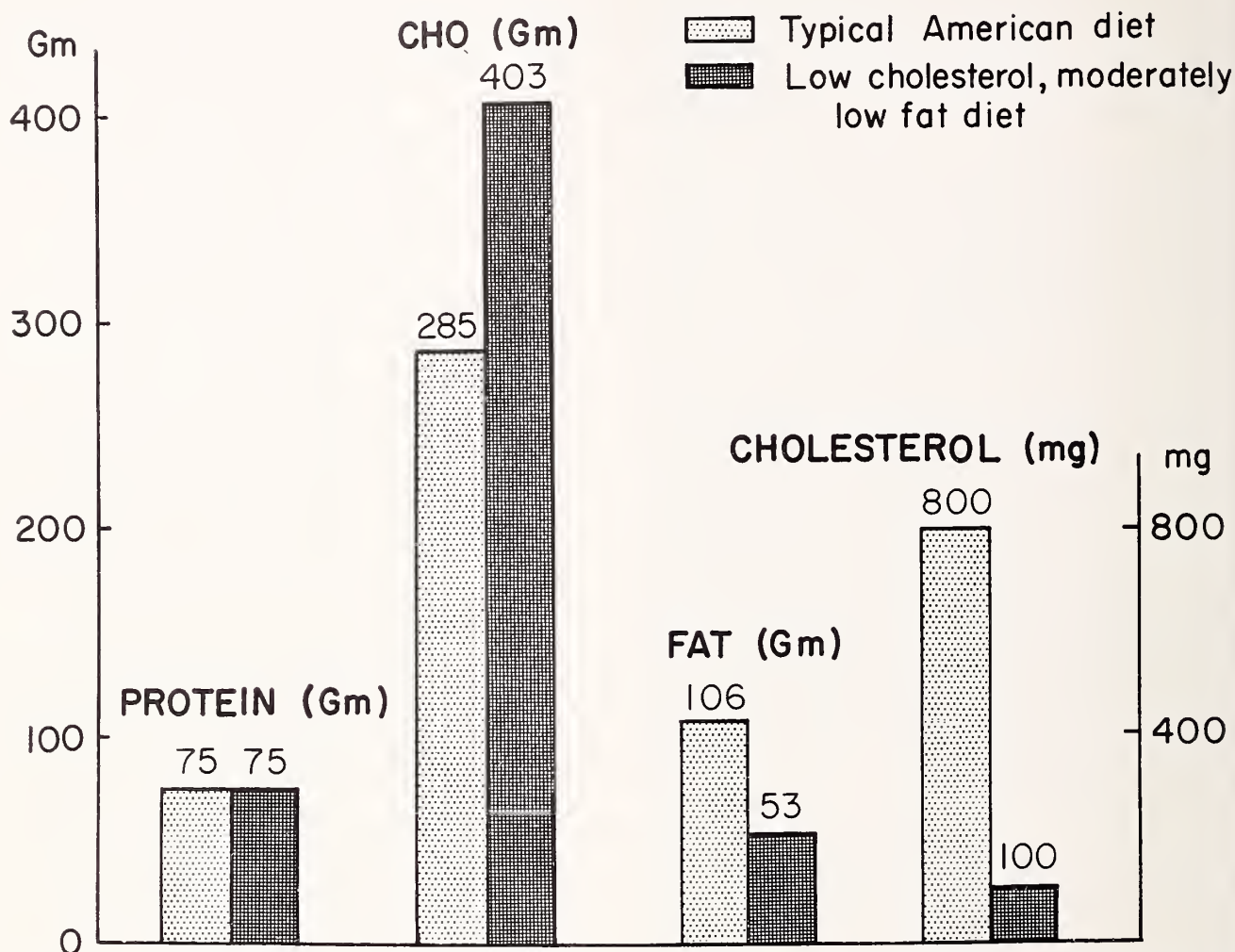


Figure 7. A comparison of the constituents of the typical American diet with the proposed low cholesterol, moderately low fat diet.

of our present state of knowledge, we definitely should treat the high-risk individuals (Table 5). These recommendations are intended to be specific and are not aimed at the population at large or at low risk individuals. Those with a strong family history of coronary disease should be considered for treatment before they develop the disease. Since high blood pressure so greatly accelerates the progression of atherosclerotic disease, hypertensive individuals not only should be treated for blood pressure elevation but also should receive

TABLE 5

THE PREVENTION OF CORONARY HEART DISEASE—THE HIGH RISK GROUP

1. Strong family history of coronary heart disease.
2. The grossly overweight.
3. The hypertensive.
4. Those individuals with diabetes mellitus.
5. Persistent elevation of the serum cholesterol level.

treatment for concomitant hypercholesterolemia, a problem many of them have. Overweight persons should be cautiously reduced. Indeed, the use of foods with lower fat content and higher bulk as in the "low-cholesterol diet" promotes lower caloric intakes.

Diabetic patients are particularly susceptible to atherosclerotic disease. Today our obligation as physicians to these patients goes beyond providing them with satisfactory control of the diabetic state. The traditional diabetic diet is especially rich in fat and cholesterol. We must now give serious consideration to lowering its fat and cholesterol content in order to prevent vascular complications. That the fat content can be reduced and the carbohydrate increased without loss of diabetic control has already been demonstrated.¹⁹

Finally, those individuals with persistent hypercholesterolemia should be treated prophylactically. At the present time there is no precise definition of the serum cholesterol level which constitutes hypercholesterolemia. Probably most investigators

of the pathogenesis of coronary heart disease would set the figure of 250 mg. per cent as the upper limit above which prophylactic treatment might well be given. The Framingham study suggests the pathogenicity of levels above 220 mg. per cent. Future studies will be needed to delineate this upper limit more precisely.

SUMMARY

The following points have been emphasized in this presentation.

- 1) Coronary heart disease in the United States has the prevalence rate of an epidemic. Its occurrence is especially frequent in middle-aged men, for clinical episodes of this disease developed in one out of eight men, aged 50-59 years, over an eight year period of observation.
- 2) Coronary heart disease has such a high mortality when the first manifestations appear in previously well individuals that the prevention of the disease is all important.
- 3) Coronary heart disease and atherosclerosis in other vascular beds are not inevitable. The accumulation of cholesterol in the arterial wall occurs because the level of cholesterol in the blood is elevated over the lifetime of the individual.
- 4) Elevation of the serum cholesterol level can be prevented or treated successfully through moderate changes in the habitual American diet. Chiefly, these changes consist of reductions in dietary cholesterol and fat. To date, this diet has been eaten by many patients. It is nutritious, and its use has resulted in a significant and sustained lowering of serum cholesterol concentrations.
- 5) It is suggested that high-risk individuals in the American population be identified and be treated prophylactically by dietary means, in order to prevent atherosclerosis and coronary heart disease.

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Immediate Care of the Sick and Injured

A course to be offered on September 26-28 at the University of Kansas Medical Center in Kansas City, will present basic instruction on the proper handling of the injured and the acutely ill by those who are first called to the scene, such as ambulance members, firemen, and others. The panel discussions provide opportunity for answering questions raised by enrollees.

Most of the following subjects will be discussed and/or demonstrated by doctors of medicine: "The Importance of Immediate Care," "Limitations of Immediate Care," "Principles of Transporting the Injured," "Traffic Control and Ambulance Safety," Movie: "Transportation of the Injured," "Fractures of the Spine: Recognition and Transportation," "Fractures of the Extremities," "Open Fractures," "Injuries to the Face," "The Normal Mechanism of Breathing," "Impairment of Respiration: Recognition," "Chest Injuries," "Resuscitation: Principles of Restoring Breathing, Including Mouth-to-Mouth Breathing," "Normal Circulation," "Shock: Causes and Recognition, Including the Circulation in Shock," "Prevention of Blood Loss: Care of Acute Bleeding," "Immediate Treatment of Shock," "The Heart Attack: Heart Emergencies," "Cardiac Arrest and the Dangers of Cardiac Massage," "Head Injuries," "Delirious and Unruly Patients: Control and Transportation," "Eye Injuries," "Transporting the Injured and Rescue Equipment," "Mouth-to-Mouth Resuscitation," "Normal Childbirth," "Emergency Childbirth," "Hemorrhage Associated with Childbirth," "Soft Tissue Injuries," "Poisoning and Medical Suicide," "Thermal Problems," "Diabetic Coma and Insulin Reactions."

Medical Therapy in Specific Categories of Ischemic Cerebrovascular Disease

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FOCAL ISCHEMIC CEREBROVASCULAR disease takes many forms, and some comments about the diagnosis might be worthwhile, at the outset, since it is appropriate to apply different treatments to various categories, rather than one treatment to all categories. The diagnosis of focal cerebral ischemia is made almost entirely clinically—i.e., on the basis of the history of the disease or the development of the symptoms, as well as on the results of the general and neurologic examinations. There are no laboratory studies which prove the diagnosis. Characteristically, the disease is abrupt in onset, occurring within minutes, hours or days. It has a characteristic constellation of symptoms and findings. The diagnosis rests on detecting that a focal area of the brain is not working, and that the focal area is related to an artery or to several arteries, and in addition that other factors—such as trauma, fever and the like—are absent.

THREE STAGES OF THE DISEASE

Ischemic cerebrovascular disease may be divided into three stages or categories. The first stage is impending stroke or transient ischemic attacks. The second stage is progressing stroke or stroke in evolution. The third stage is stable infarct or completed stroke. These three categories are stages in the temporal profile of focal ischemic cerebrovascular disease or the natural history of the disease in such a patient. These stages do not refer to a particular artery or arteries, nor do they refer to any specific part of the brain. Thus, for each stage, further delineation has to be made. That is to say, one must discover which artery is involved, and which portion of the brain is ischemic.

This categorization is somewhat arbitrary. A patient may have two stages going on at once. For instance, a patient may have homonymous hemianopia from a previous stable infarct, and then al-

so have transient ischemic attacks. It is important to understand this, for one has to decide on a method of treatment and on the objective that he proposes to attain by means of treatment.

TRANSIENT ISCHEMIC ATTACKS

Impending stroke—incipient stroke or transient ischemic attacks—consists of attacks of focal neurologic dysfunction lasting 15 or 30 minutes. Between attacks, the patient is normal. The attacks occur at variable intervals over days or months. They can be further divided on the basis of anatomic regions—the portions of the brain which are ischemic. Originally, these were divided into the large groupings of carotid arterial insufficiency and vertebral-basilar arterial system insufficiency, as a diagnostic framework. The use of these terms originally, and still today, does not necessarily imply that the arteries themselves are diseased or stenotic, but that an area within their territory of supply is ischemic.

In carotid arterial system intermittent insufficiency, the patient has attacks of numbness or weakness limited to one side of the body. If he has involvement of the dominant hemisphere, difficulty with communication, that is, aphasia, may occur. On the side of the diseased artery, impaired vision may occur. This is unilateral amaurosis fugax. Examination will reveal nothing abnormal between attacks, with the exception that in some patients evidence of atherosclerosis may be noted, as the absence of a pulse in the carotid artery, reduced retinal artery pressure or the presence of bruits over the carotid artery.

Vertebral-basilar arterial insufficiency is the same in regard to the timing and character of the attack. The symptoms result from ischemia of those parts of the brain served by the basilar artery—the brain stem, the cerebellum and the posterior portions of the cerebral hemisphere. There may be attacks of any type of weakness, such as monoparesis, hemiparesis, crossed hemiparesis or quadriparesis, alone or associated with numbness. Alteration in vision is in the form of involvement of both eyes, that is, bilateral homonymous hemianopsia. Double vision or diplopia and rotational vertigo are common. Occasionally, patients will have dysarthric disturbances of speech or difficulty

Dr. Siekert, an assistant professor of neurology in the Mayo Foundation and consultant in neurology at the Mayo Clinic, made this presentation in Des Moines on Mercy Hospital Medical Day, November 10, 1962.

in swallowing. A characteristic feature is numbness around the mouth, in association with alteration in speech function. Clouding of consciousness may occur, but this is a symptom which should be looked upon with a great deal of care, because it may be difficult at times to distinguish an ischemic origin from that of a convulsive disorder; one needs a careful history in order to make this differentiation.

The differential diagnosis in patients with transient ischemic attacks includes such ailments as Meniere's disease, migraine, hemiplegic migraine, and convulsive disorders from any cause. It should be noted that the diagnosis of ischemic attacks should be based upon a clear-cut constellation of symptoms. Patients who have only vague dizziness once in a while may indeed have vascular ischemia, but such a diagnosis cannot be made on that vague symptom alone.

PROGRESSING STROKE

The important general feature of a progressing stroke is the time sequence of the development of the neurologic deficits—over a matter of hours. In making the diagnosis of slow stroke or stroke in evolution, it is important for the physician to come to a decision on the basis of what he has observed for himself. That is to say, the examining physician should observe the patient change from a condition of a little weakness in one hand through a condition of severe weakness in one hand and later hemiparesis, rather than to call it a slow stroke because someone else said it evolved gradually prior to the time the physician first saw the patient. Again, the findings will indicate a focal disease of the brain.

The things that one ought to consider in differential diagnosis in a patient who has a stroke in evolution are brain tumor, spontaneous or traumatic intracranial hemorrhage, abscess, and post-ictal states. This type of differential diagnosis is identical with that which confronts us in a patient who has a completed stroke or a stable infarct; included are the things one usually thinks of when he observes a patient who has a hemiparesis or a major focal neurologic deficit that has occurred within a matter of a day or two prior to examination.

COMPLETED STROKE

The third stage, completed stroke, is a neurologic deficit that has stopped progressing, no matter what the type of deficit is or its degree. In other words, a patient may have a mild hemiparesis and that's all he'll have. Or the patient may have a hemiplegia. Again, the constellation of findings will help one in diagnosis. An example is the lateral medullary infarct. It is not very common, but when it is present it tends to exclude other illnesses. These patients have a sudden onset of vertigo, with nausea and vomiting. Neurologic

examination reveals, on the side of the lesion, weakness of the palate, Horner's syndrome (ptosis, miosis and anhidrosis) and diminution in pain and temperature sensations of the face, and ataxic limbs, and on the opposite side of the body and limbs there is a loss of sensation for temperature and pain. The differential diagnosis of a completed stroke is the same as listed previously for a stroke in evolution.

DIAGNOSTIC AIDS

What are the laboratory aids for use in patients who have cerebrovascular disease? A spinal fluid examination may have to be performed, but in most instances it reveals normal findings. Occasionally, patients with infarcts will have some elevation in protein, a few lymphocytes, and occasionally a few red cells in their spinal fluids. However, when these things are present, the diagnosis must be made with caution. In patients who have hemorrhage or meningitis, characteristic abnormalities in the spinal fluid will be noted.

An electroencephalogram may be helpful in some instances. The abnormality noted on the electroencephalogram, in general, is related to the severity of the abnormality observed on neurologic examination. Thus, in a patient who consults a physician between transient ischemic attacks, the electroencephalogram is likely to be normal. If it is not, and if the diagnosis by history is not clear, it may be that the patient has some other episodic disease such as epilepsy, and the possibility of a mass lesion should be considered. If a patient appears in a hospital with a hemiplegia, he may have a severe disturbance in the electroencephalogram.

Head x-rays are usually normal. For patients in whom the diagnosis is in doubt, head x-rays may help in excluding such things as mass lesions by noting the absence of bony changes or a change in the position of the pineal gland.

Arteriography is a useful examination, and may be resorted to in those patients in whom the diagnosis is in doubt. Some investigators believe it should be used as a routine procedure in patients with any type of cerebrovascular disease. We have tended to use arteriography only under two circumstances: (1) when the diagnosis was not clear clinically, and (2) in those patients whom we thought to be appropriate candidates for reconstructive surgery of the arteries in the neck or thorax. The risk of arteriography is minimal but definite. It has been found during the last few years that injection directly into the carotid artery in patients with atherosclerosis of this artery has more risk in it than injection into other nearby arteries, such as the brachial, subclavian, innominate or the aorta. It should be pointed out, however, that arteriography will frequently show lesions which are not necessarily related to the symptoms and signs presented by the patient. We

have had a number of cases where atherosclerosis has been found on arteriography; we were surprised that this occurred, for we had thought that the patients had mass lesions. As it turned out, our clinical diagnosis had been correct, and atherosclerosis was a co-existing lesion.

In approximately 75 per cent of people over the age of 50 years who have arteriography for various types of ischemic cerebrovascular disease, atherosclerosis will be found in the cervical or within the intracranial arteries.

In routine autopsies, not necessarily related to ischemic cerebral disease, a high percentage of patients will have evidence of stenosis or occlusion of the extracranial arteries. Of a hundred specimens that were examined by Martin and colleagues (Occlusive Vascular Disease in the Extracranial Cerebral Circulation. Martin, M. J., Whisnant, J. P., and Sayre, George. *A.M.A. ARCH NEUROL.* 3:530-538, November, 1960), 40 per cent had at least an occlusion of one artery or a 50 per cent stenosis of one artery.

Another test that may be considered is the pneumoencephalogram. Since it is usually normal, it ordinarily is not helpful in patients who have cerebrovascular disease, but it is necessary in those instances where the diagnosis of ischemia is not possible on clinical grounds.

TREATMENT METHODS

What is the aim of treatment? How can we relate these three categories to our treatment program? In patients who have completed strokes, the basic aim is supportive care, treatment of the marginal zone, rehabilitation, and prevention of recurrence. In patients who have progressing stroke, we hope to stop the progression or, in other words, to prevent the neurologic deficit from increasing. The only way the efficacy of treatment can be proved is by a statistical comparison of treated and untreated patients. In patients with transient ischemic attacks, or impending stroke, we hope to prevent the attacks and thus prevent cerebral infarction.

The general measures useful for patients with completed stroke include attention to respiratory, bowel and bladder function, chemical imbalance in the blood, appropriate nutrition and care of the skin.

What vasodilating agents might be available to prevent or to treat the marginal zone? Inhalation of a mixture of CO₂ 5 per cent and O₂ 95 per cent is useful and apparently helpful. Nicotinic acid, Cyclospasmol and Vasodilan have been used, but as yet have not been shown statistically to be helpful in the prevention or the reduction of a neurologic deficit.

Fibrinolytic agents have been used for patients with completed infarcts, but on the basis of alternate studies have not been found to give reduction in the amount of neurologic deficit or

in the death rate. Anticoagulants have been advocated by some, but it is our feeling that anticoagulant therapy should not be given to patients with completed infarcts. There is only one exception to this rule. When an embolic source in the heart is the cause, anticoagulant therapy may be begun several days later to prevent another embolism, but not necessarily to alter the already existing neurologic deficit.

In patients with progressing strokes, general measures should be used as mentioned before. Vasodilators have been used also. Some people have advocated the use of stellate ganglion blocks, but it seems to us that these have not been associated with any increase in the rate of cure or improvement. Fibrinolytic agents have been used in patients with progressing strokes, but again without any evidence of help. In patients who have evolving strokes, anticoagulant therapy appears to be useful.

The results in a series of patients with actively advancing stroke, progressive stroke, are as follows. The anticoagulated group of patients had a 9 per cent hemiplegic/death rate, and the non-anticoagulated a 35 per cent hemiplegic/death rate at the end of one month. At the time one sees the patient with a progressing stroke, he has no way of knowing whether the deficit will continue to increase, or whether the stroke will stop progressing and resolve. This then necessitates a comparison between groups of cases; an individual case obviously cannot prove it. In patients with progressive stroke, anticoagulant therapy may be given as an emergency. The diagnosis must be as accurate as possible, and one again must be certain that other diseases are not present.

In patients who have intermittent insufficiency—i.e., transient ischemic attacks—it is important to treat associated illnesses such as hypertension, hypercholesterolemia, polycythemia, and anemia, all of which may be factors in the production of transient attacks. In the hands of some investigators, the vasodilating agents that I have mentioned have reduced the frequency of the attacks. However, at the present time it is not known whether they will actually prevent the occurrence of cerebral infarction on a statistical basis.

To date, fibrinolytic agents have not found a place in the treatment of patients with transient ischemic attacks, because of the difficulty in being certain of the effectiveness of a lytic system. Patients with intermittent insufficiency appear to us to be the group that can benefit most from anticoagulant therapy given on a long-term basis.

Table 1 shows the results of follow-up of a group of patients who were treated with anticoagulants, and a group who were not, even though such therapy was advised for those latter. The patients were followed for periods ranging from four to eight years; there were 175 patients in

TABLE I
ANTICOAGULANT THERAPY FOR CEREBROVASCULAR
INTERMITTENT INSUFFICIENCY: STAGE I, OR
IMPENDING STROKE (FOLLOW-UP:
3 TO 8 YEARS)

	Treated		Not Treated*	
	Number	Per Cent	Number	Per Cent
Normal	131	74.8	83	51.9
Cerebral infarct ..	4	2.3	33	20.6
Dead	40	22.9	44	27.5
Cerebral infarct ..	3	1.7	18	11.3
Cerebral hemorrhage ..	13	7.4	7	4.4
Noncerebral ...	24	13.7	19	11.9
Totals	175	100	160	100

* Or treated for only several months.

the treated group and 160 in the non-treated group. What we are attempting to do in this type of treatment is to prevent the occurrence of cerebral infarcts. In the treated group, a non-fatal cerebral infarction occurred in 2.3 per cent, and in the non-treated group 20.5 per cent. Fatal cerebral infarction occurred in 1.7 per cent of the treated group, and in 11.3 per cent of the untreated group.

There is some risk in the use of anticoagulant therapy, the principal risk being that of cerebral hemorrhage. In the treated group, the incidence was 7.4 per cent, and in the untreated group, 4.4 per cent. Since untreated patients with intermittent insufficiency may have a cerebral hemorrhage, patients given any type of treatment have to be matched against them. In this series the difference of about three per cent has to be weighed against the mortality differential of about 11 per cent.


I think a few more comments concerning anticoagulant therapy are in order. There has been considerable discussion about this treatment during the past 10 years, and the matter is not settled. First of all, when should anticoagulant therapy be considered in a patient with any kind of stroke? It should be thought of in only two basic categories—patients with transient ischemic attacks (incipient stroke) and patients whom you observe getting worse during the period when you have them in the emergency room (progressing stroke). If one limits the use of anticoagulant therapy to these two groups, I think the risk is very minimal. Where the difficulty in using it and where the medication has caused trouble are in those instances in which patients with a stroke

have been treated with anticoagulant therapy. An estimated 8 per cent of patients with infarcts or supposed infarcts and with normal spinal fluids really have intracerebral hematomas which are silent. Even though such a lesion is small, it seems only logical to us that anticoagulants in such patients are not worthwhile and may even involve some risk. Thus, regardless of the exact lesion present, the "garden variety" of stroke patient should not be treated with anticoagulant therapy. If one eliminates these, little risk is involved in the treatment. Since the likelihood of benefitting the infarcted area with this therapy is nil, the risks need not be assumed. In patients with transient episodes of neurologic dysfunction or with advancing deficits, the diagnosis may not always be clear; further observation and not anticoagulant therapy should be given these patients.

Patients with recurrent emboli, as for instance from a myocardial source, and with atrial fibrillation can be treated with anticoagulant therapy. One should note the very important exception, however, that patients with subacute bacterial endocarditis, with or without embolic phenomena, should not be so treated. Another group which is not numerous but should be mentioned consists of patients with actively advancing cranial arteritis, particularly those in whom involvement of the optic nerve is present. Anticoagulant therapy is combined with steroid therapy in these patients.

Anticoagulant therapy should not be used in patients who aren't intelligent enough to manage their medicine, or whose relatives are not intelligent enough to manage it. In our opinion, unreliability on the part of the patient is probably the only absolute medical contraindication to the use of this medicine. To this unreliable group may be added, in selected instances, patients who have severe kidney or severe liver disease.

It is very important for a doctor who is using this treatment to have at his disposal a laboratory whose internal reliability is consistent, and it is important that he himself should be familiar with the use of the medicine.



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Radiologic Diagnosis of Vascular Disease

KARL A. YOUNGSTROM, M.D.

Kansas City, Kansas

THE PROBLEMS OF vascular disease were studied earliest, here in America, by Alexis Carrel and Guthrie, approximately in 1908. The radiologists didn't become interested in the subject until considerably later, for they had to develop contrast materials which were not too toxic and which were safe enough to give by intravenous or intraarterial injection without complications. These technics and their development are one of the major features which I should like to discuss. I shall also mention some of the pitfalls which one should expect to encounter, and to talk about ways they can best be avoided. Radiologic studies are really quite important in differentiating among the types of vascular problems and in arriving at an accurate diagnosis.

The history of contrast opacification of vessels was nicely documented by Fulton (1956). As early as 1924 Brooks, in St. Louis, demonstrated a femoral arteriogram made by injecting sodium iodide directly into the artery. Egas Moniz, a Portuguese, published his method of carotid arteriography in 1928. Abdominal aortography was first practiced by Dos Santos and others, in Portugal, by 1929. Angiocardiography was developed by a group of Cuban workers, Castellanos, Pereiras and Garcia, in 1937.

SERIAL CEREBRAL ARTERIOGRAPHY

Figure 1 is a picture of an apparatus that we use nowadays for this type of study. I show it only to emphasize an important feature of our work—that we do everything possible to reduce the amount of contrast material used both in any one injection and in the course of an entire study. In cerebral arteriography, the patient's head is placed on a balsa wood block, and one x-ray tube fires toward the bank of films in the lateral direction. The other x-ray tube overhead fires against the bank of x-ray films in cassettes under the patient's head. The patient is lying supine on the table. A switch in the wall has a long cord connected to it,

Dr. Youngstrom, an associate professor of radiology at the University of Kansas Medical Center, gave this lecture in Des Moines on Mercy Hospital Medical Day, November 10, 1962.

so that the technician stands at the other end of the room, some 20 feet away. When he makes the contact of that switch, both the x-ray generators are fired simultaneously, and we get a simultaneous, so-called biplane view of the contrast material that is going through the blood vessels of the patient's brain. With this arrangement we are able to obtain four pictures in each projection within about four seconds, if we wish, though usually that is faster than necessary.

In Figure 2 a patient has been positioned for a simultaneous biplane cerebral arteriogram. We have found it necessary to have his head fastened securely. In this instance tape has been used, but a web belt does just as well, especially if the balsa is wedge-shaped at the bottom to fix the occiput firmly in position. Early studies by this method often showed poor contrast because of "scatter," a diffusion of the secondary x-rays from the patient's head onto the film in addition to the primary x-ray beam that went straight through to the

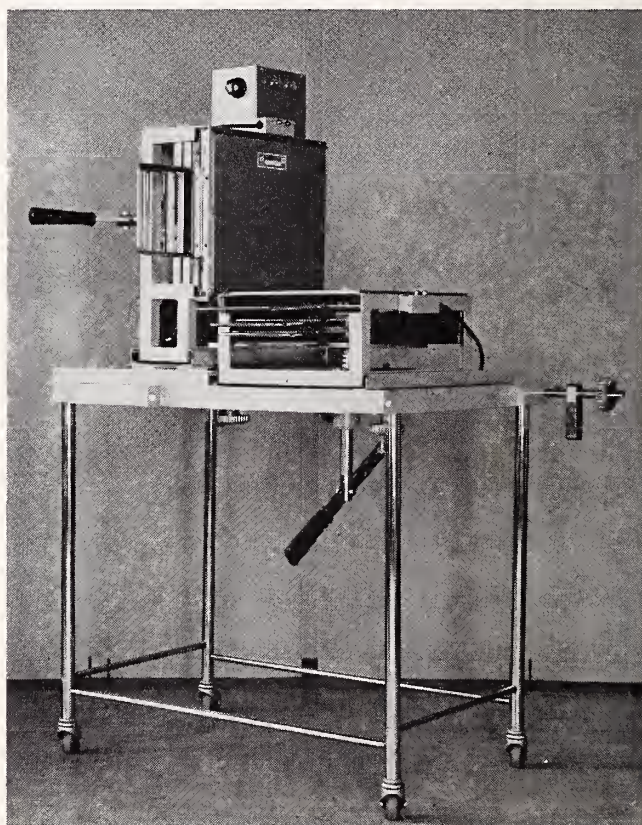


Figure 1. Apparatus used in cerebral arteriography.

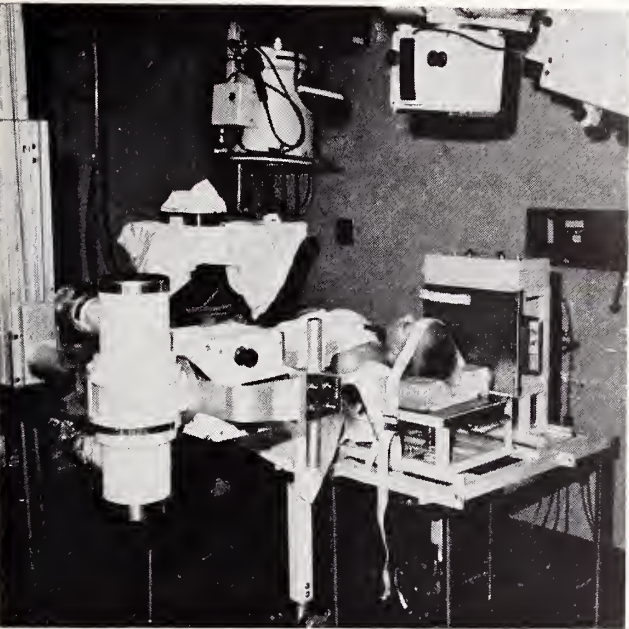


Figure 2. Patient positioned for simultaneous biplane arteriography.

film. This "scatter" is controlled by a grid, in regular diagnostic procedures. However, in this set-up we have a grid of a 15 to 1 ratio which covers the bank of films under the head. The other grid is a crossed $7\frac{1}{2}$ to 1 ratio because we always shoot the x-ray perpendicular to it. The one on the bottom is a parallel grid. These are essentially equal in their capacity to absorb scattered x-rays and yet transmit the primary beam. However under these circumstances, with the 100 kv. x-ray that one might expect to be able to use for studies of the head, very high scatter is generated. Yet if we dropped the kilovoltage to around 85 kv. and increase the electrical current—in other words the milliamperere seconds—enough to get the blackness we want on the film, we would reduce the quantity of secondary x-rays generated, and make it possible to get an adequate contrast. That in itself would not be sufficient if it were not for the fact that there is a considerable air space left between the patient's head and the bank of x-ray film, on the lateral view. The balsa block functions in this same way by providing air space between the grid and the patient's head. Air space is a really important factor, and is frequently overlooked as a means of controlling scattered x-rays and preserving contrast.

Cerebral arteriography is a pretty routine study now. We usually accomplish these studies with one injection of approximately 6-8 cc. of 50 per cent Hypaque into the carotid artery, and we get an arterial, a capillary and a venous phase, regularly, plus a fourth film that may turn out to be either an extra venous or an extra arterial phase, depending upon the rate of circulation and upon the rate at which we pull the films by hand. We find

this particular apparatus very satisfactory because it is simple and because there are so few gadgets to get out of control. Anyone can learn the rate at which to pull these, after watching the procedure no more than a time or two.

Figure 3 is an example of total cerebral angiography. This is most practical with children under general anesthesia. After placing the catheter tip in the arch of the aorta and injecting 25 cc. of 50 per cent Hypaque within one second, it is possible to obtain a series of simultaneous biplane exposures such as are seen here. The arterial, capillary and two venous phases are demonstrated.

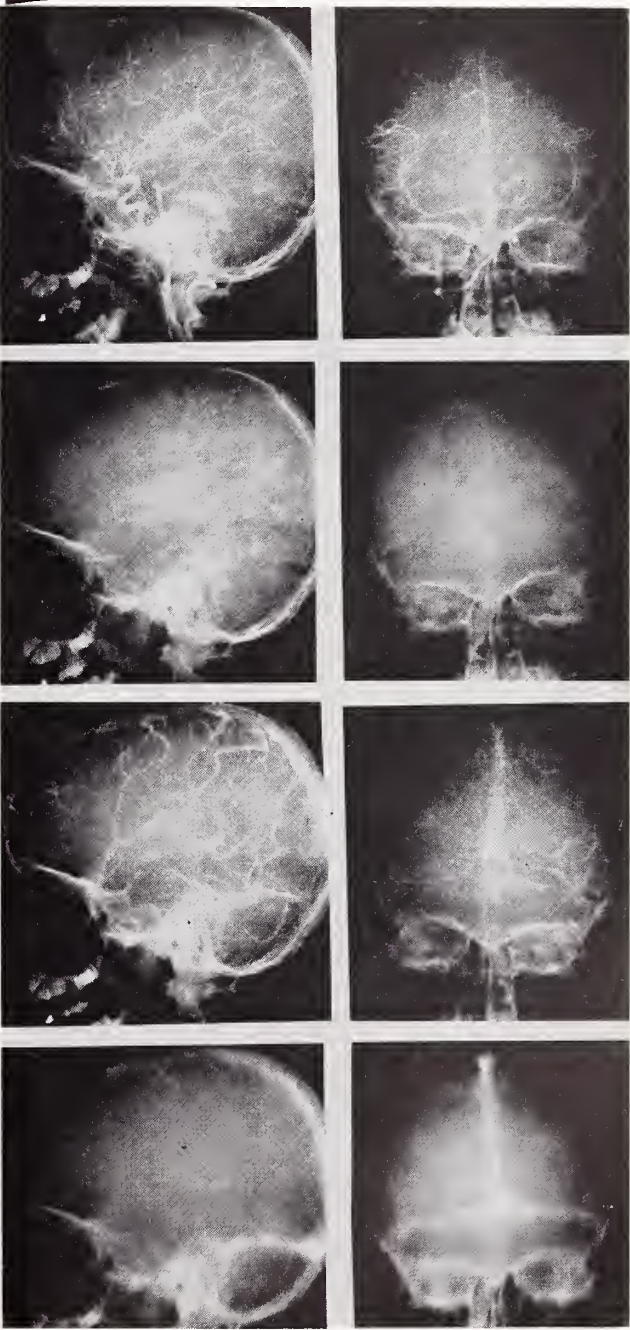


Figure 3. An example of total cerebral arteriography.

NEWLY DEVELOPED CATHETERS

Seldinger (1953), in Sweden, published the percutaneous catheter technic. He made radiopaque tubing and colored it variously to indicate the different sizes. A wire is passed through the special needle into the brachial, the femoral or whatever other artery one wishes to study. The preformed catheter is then passed into the artery over the wire while the wire serves as a guide. The radiopaque catheter is then carefully placed, under fluoroscopic control.

While searching for a better catheter material, we discovered a new use for the electrician's "spaghetti." I refer to the Teflon tubing that is used for insulation of individual wires. We have used it to make catheters. This sample happens to be radiolucent, yet with the guide wire in position it can be placed where desired, under fluoroscopic control. (Since this paper was presented the U. S. Catheter and Instrument Corp. has made radiopaque Teflon catheters.) The Teflon has some advantage over the soft plastic catheters that were first used. The polyethylene catheters are so soft and flimsy that they tend to whip back when injections are made. (See Figure 5.) The Teflon is quite a bit stiffer and avoids that problem.

After the catheter has been placed satisfactorily, a pump injector is attached, which contains a metal syringe with contrast material, usually Hypaque. Some newer materials which are said to be a little less toxic are coming onto the market now. One of them is Conray. Power for the injection is furnished by a small carbon dioxide cartridge. A regulating pressure gauge aids in predetermining the pressure at which the injection will be made. This is called the Amplatz injector, after the radiologist responsible for its development.

A few little details in this procedure make the difference between success and failure. For one thing, in obtaining the necessary contrast in the films, it is very helpful to get the material injected rapidly enough to prevent too much dilution by the oncoming blood. For a study of the great neck vessels, we find it very desirable to place the tip of the catheter in the ascending arch of the aorta. Then we can show all the vessels with one injection and in one film. If the timing of the exposure is not satisfactory, one will miss the information essential to the diagnosis, so we have come to depend more upon serial radiographs as a regular procedure.

The pressure varies, depending on where the tip of the catheter is placed. For example, we find that injection into the ascending arch of the aorta requires approximately 40 to 50 cc. of Hypaque of 50 per cent concentration, and it has been very helpful to have the patient hold his breath and strain down—making the so-called Valsalva maneuver—for about seven or eight seconds before the injection is delivered. This timing has been shown important in that the blood pressure and

pulse rate take that long to drop, reflexively, to the lowest possible point. After that, they tend to rise, and earlier than that they are not quite as low as they will go. This little trick helps to provide a greater concentration of dye in one bolus, and to give a better picture than one might otherwise obtain.

If, for instance, we were interested only in the vertebral and the carotid on one side, we would use 25 per cent Hypaque and would need a volume of only 25 cc. We might use more if we wanted to fill the vertebral all the way up to the brain and to employ the so-called one film technic. The pressure for such an injection would be reduced to approximately 70 lbs./sq. in. for this particular Amplatz injector, whereas for an injection into the aorta, the pressure would be approximately 120 lbs./sq. in. or more. If we were using smaller bores and longer catheters, as we sometimes do for cut-down operations, pressures as high as 200 or 250 lbs./sq. in. would be required in order to deliver the contrast material at a satisfactory rate.

While we are waiting for the films, the catheter remains in place, and is irrigated frequently with saline containing heparin. The patient is examined in this way under a local anesthetic. Usually some mild degree of sedation is administered, if he is at all nervous, but there really is very little discomfort associated with the examination. There is a hot flush or pressure sensation experienced as the contrast material goes through the vessels, but it disappears so rapidly that patients don't really complain about it except to talk afterward about how hot it was.

After we have done this injection, we normally decide that we need three views to be sure that we have displayed the vessels in their different profiles. If there is a plaque somewhere in one of these vessels, and if we are looking at its flat surface, it may not be readily apparent, but if we rotate the vessel, it may show up much more distinctly. I have no statistics on how often such is the case, but we feel that this procedure is helpful.

Credit goes to Dr. Amin Faris, a resident in neurology, for getting the idea of doing electroencephalographic records simultaneously with the injection of the dye through the brain, to see whether we could recognize any disturbance. We did 25 studies of that type, and found no significant changes in the electroencephalographic records. Almost regularly the simultaneous electrocardiographic records did show depressions of various degrees, however.

It has been suggested that if the electrocardiograph shows a disturbance during an injection, the study should probably be terminated. We feel, however, that if we were to follow that rule, we probably would complete no studies. We aren't really concerned about a cardiac-rate disturbance that lasts no more than a second or two. The information to be obtained, we think, is important

enough to justify this negligible risk, and we actually haven't had any problems with cardiac complications as a result of studies under the conditions that I have described.

THE ODELCA SERIOGRAPH

There is one more piece of apparatus that I want to mention, the so-called Odelca seriograph. It is composed of a fluorescent screen 14 in. square and an angle mirror that throws the light back to a curved mirror. The 4×4 film is transported in front of the light beam at an appropriate predetermined rate. This system of optics was invented by Dr. Bouwers, of Old Delft, Holland, and it has a very high efficiency of approximately 0.75 numerical aperture. This is a rather nice seriograph because it will take a series of up to 40 exposures, and one can program them in groups of five up to a speed of six per second, or as slow as one every two seconds. The only disadvantage of it is that it requires a rather high dose of x-ray—a dose actually greater than for direct radiography of film with intensifying screens. The method is economical in that these 4×4 films cost seven cents each, as compared to sixty cents each for the standard x-ray sheet film. The small film provides adequate detail for the problems presented, and the optics will resolve more fine detail than any film will record.

Figure 4 is an example of a problem that was solved with this kind of equipment. The patient had a large tumor in the neck that was felt to be definitely carcinoma, and in addition a tumor shadow in the right apex medially (Figure 4a). An arteriogram was done. We obtained opacification of all the great neck vessels on the right and the neck veins bilaterally some eight seconds after the injection (Figures 4b and c). The shadow in the plain chest film that we thought might be metastatic tumor turned out to be a tortuous subclavian artery. Thus the problem of exploring the chest was avoided.

SOME PITFALLS IN ARTERIOGRAPHY

Figure 5 illustrates one of the problems encountered in passing the flimsy polyethylene catheters that were first used over guide wires for brachial arteriography in this country. Figure 5a shows that the catheter bounded back to form a coil within the subclavian artery, and the injection was unsatisfactory. Subsequently a catheter was passed via the left brachial (Figure 5b) so that the tip was lodged in the ascending arch of the aorta, and satisfactory studies were obtained. Usually it is easier to pass the catheter into the aorta from the right. These soft catheters have recoiled enough times so that we know they will do so while the injection is still going on, and as a result may pinch themselves off. Then the catheter springs a leak, most commonly near its attachment to the syringe adapter. Because of this common complication, especially in large-caliber vessels such as large innominate or a large ascending arch of the aorta, we have found it desirable to use the Teflon type of catheter that has a little more stiffness and withstands considerably higher injection pressure.

Another feature to keep in mind is that there is a very flexible tip to the wire that is passed through the center of the catheter, and that tip must protrude an inch or so, at least. This helps to prevent gouging the wall with the catheter. The stiff catheter is thought to be a little more likely to do this sort of thing, but we have seen it accomplished even with the polyethylene one, and thus considerable care must be taken in passing the catheter, and when any resistance is encountered, fluoroscopy should be employed, or the catheter should be withdrawn and a check should be made for blood flow from the catheter. In any event, after the catheter is passed, we find it particularly desirable to make a small injection to demonstrate where the tip of the catheter actually is, before injecting the large bolus for the definitive study.

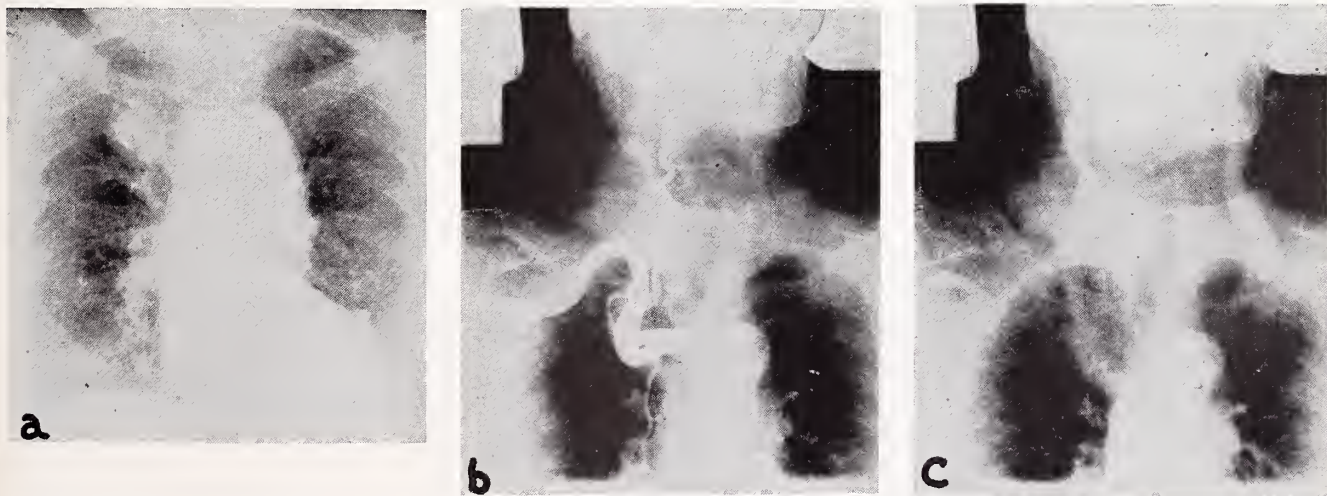


Figure 4. (a) The patient had a large tumor in the neck that was felt to be a carcinoma, and in addition a tumor shadow in the right apex medially. (b and c) We obtained opacification of all the great neck vessels on the right and of the neck veins bilaterally about eight seconds after injection. The shadow was no more than a tortuous subclavian artery.

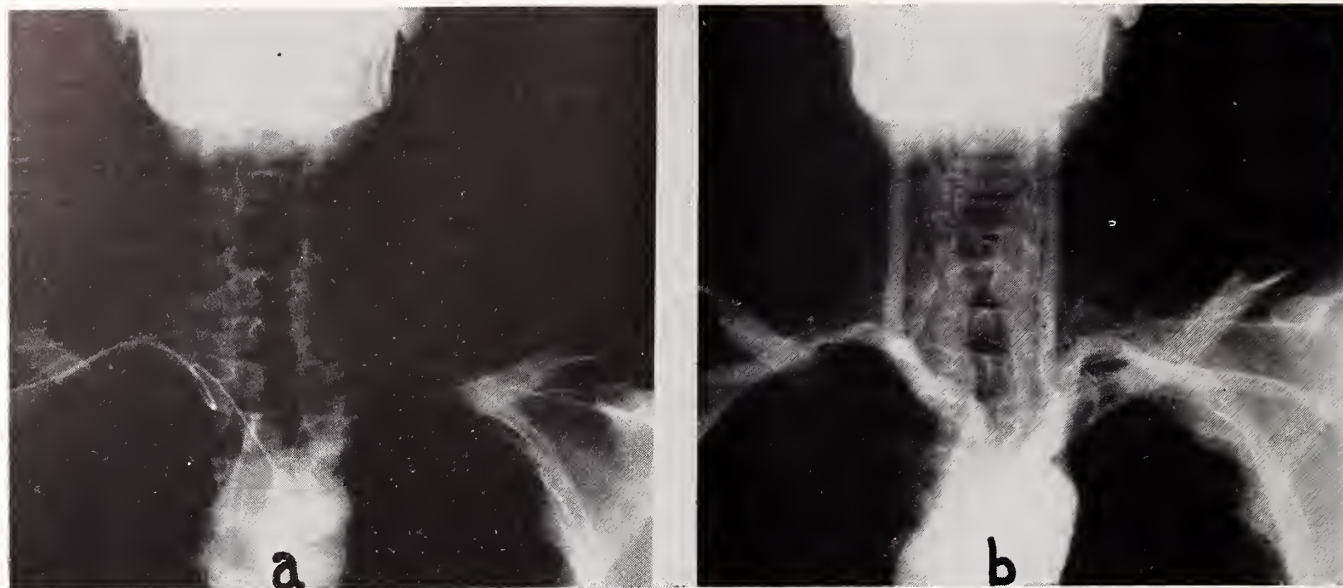


Figure 5. (a) A flimsy polyethylene catheter bounded back to form a coil within the subclavian artery. (b) Subsequently, a catheter passed via the left brachial was lodged in the ascending arch of the aorta, and satisfactory studies were obtained.

This gives us greater assurance that we are ready to deliver the contrast material in the exact site with which we are concerned.

Figure 6 shows a type of arteriography that has been extant for considerably longer in this country. The urologists, I believe, were among the first to popularize it. A long needle is passed through the back, just under the twelfth rib, and into the aorta, and the injection of the contrast material is made directly through this needle into the aorta. This procedure carries the hazard of injecting into the mouth of a small vessel, and also of intimal stripping or injecting partly into the artery and partly outside, because of the bevel of the needle. A certain number of accidents of this kind have occurred, with various degrees of morbidity. However, we find that it is really a fairly safe method if considerable care is observed in its use.

One of the precautions is to make a small test injection first, so that one may be sure of the area into which the contrast material is going to be delivered. Such things as transverse myelitis have developed from injections improperly directed.

The concentration that is delivered to these vessels is of paramount importance, and I wish to call your attention to what I consider a classic study in this area by Doctor George Margolis and associates, at Duke University (1956). It concerns passing a catheter up the femoral arteries of dogs, injecting constant volumes of various concentrations of the then known contrast materials, and judging the reactions clinically. The reactions were carefully graded from "no reaction" to "grand mal seizure." The severity of the reaction was found to be very closely proportional to the concentration of contrast material injected. As a result of these studies, we have a much better idea of the tolerance of the spinal cord to the type of insult associated with aortography. This has served as a

guide for us in estimating the concentration that we should expect to end up with in any vital organ such as the brain or kidney. The titrations for the kidney have not yet been so precisely defined as for the spinal cord.

ADAPTATIONS OF THE AFOREMENTIONED EQUIPMENT AND TECHNIQS

By heating and molding, it is possible to fix a curve into the tip of the catheter, particularly the

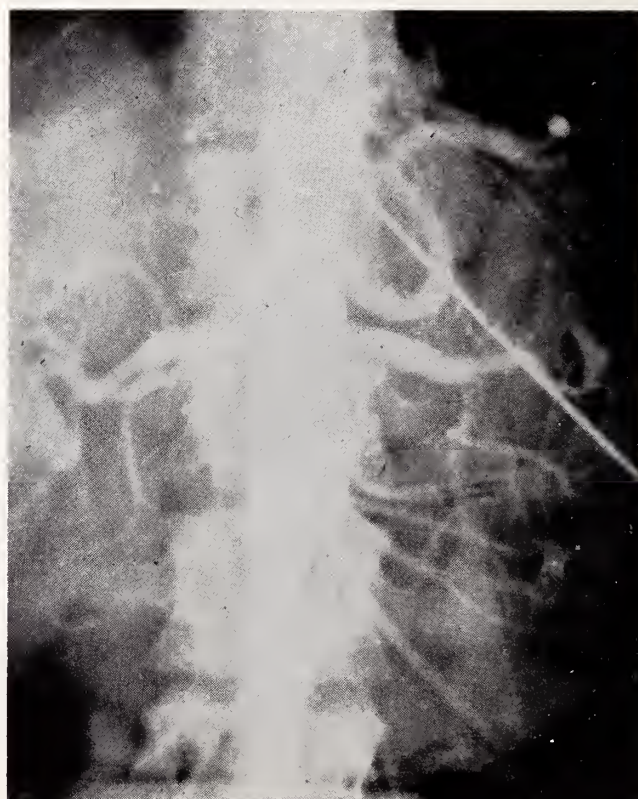


Figure 6. In a type of arteriography popularized by the urologists, a long needle is passed through the back, just under the twelfth rib, and into the aorta.

radiopaque type, so that it can be manipulated under the fluoroscope and passed directly into the renal artery. Then a very small amount—approximately 3 cc. of 35 per cent Hypaque—is injected, and we obtain a very high-contrast picture of the renal vessels. This method has the disadvantage that it does not allow one to determine whether there are other arteries present. It may be used in studying the mesenteric arteries, but it is not essential, for this can be done with an aortic injection.

A catheter is most easily passed by way of the femoral artery. For the study of the abdominal aorta, the tip of the catheter is placed at the level of the first lumbar vertebra, and the first exposure is made during the injection of the contrast material for the best delineation of the aorta and its branches. These vessels can be displayed by the cine-roentgenographic technic. We have an example of a child in whom bilateral narrow renal arteries were demonstrated in this way. In the large adult patient, though, it is usually impossible to show satisfactory contrast by the cine technic and one must resort to other types of serial radiography.

Figure 7 is an example of the Odelca seriographic technic applied to this type of examination, and shows the advantage of timing in the control of exposures. These exposures were made at one-second intervals. In the first phase the kid-

ney is not well identified, and if it were the only view, we should have trouble appreciating the actual kidney size and shape. In the later phases of the study, the kidney outline becomes very distinct, especially during what we call the capillary phase. The vessels that are filled with contrast material are so small that we cannot identify them individually, but collectively they are so numerous as to indicate that portion of the organ.

We did one study on a young adult patient in uremia and hypertension (Figure 8). The renal arteries were not seen in any phase of the serial radiographic study, although the splenic and hepatic arteries were demonstrated. The patient died some 12 hours later. The kidneys were extremely swollen and edematous. The arteriographic problem is similar to the situation seen when one attempts carotid arteriography in the presence of severely increased intracranial pressure. Likewise, then, when the cerebral circulation is not demonstrated because of the increased intracranial pressure, such patients are usually dead within 12 hours.

In this arteriogram (Figure 9), there is definite narrowing of the carotid artery at its bifurcation. There is also marked kinking of the vertebral artery. This film is shown to indicate the type of pathology we find. Dr. Siekert mentioned that we sometimes find these changes without understanding their full significance. We know that the blood-

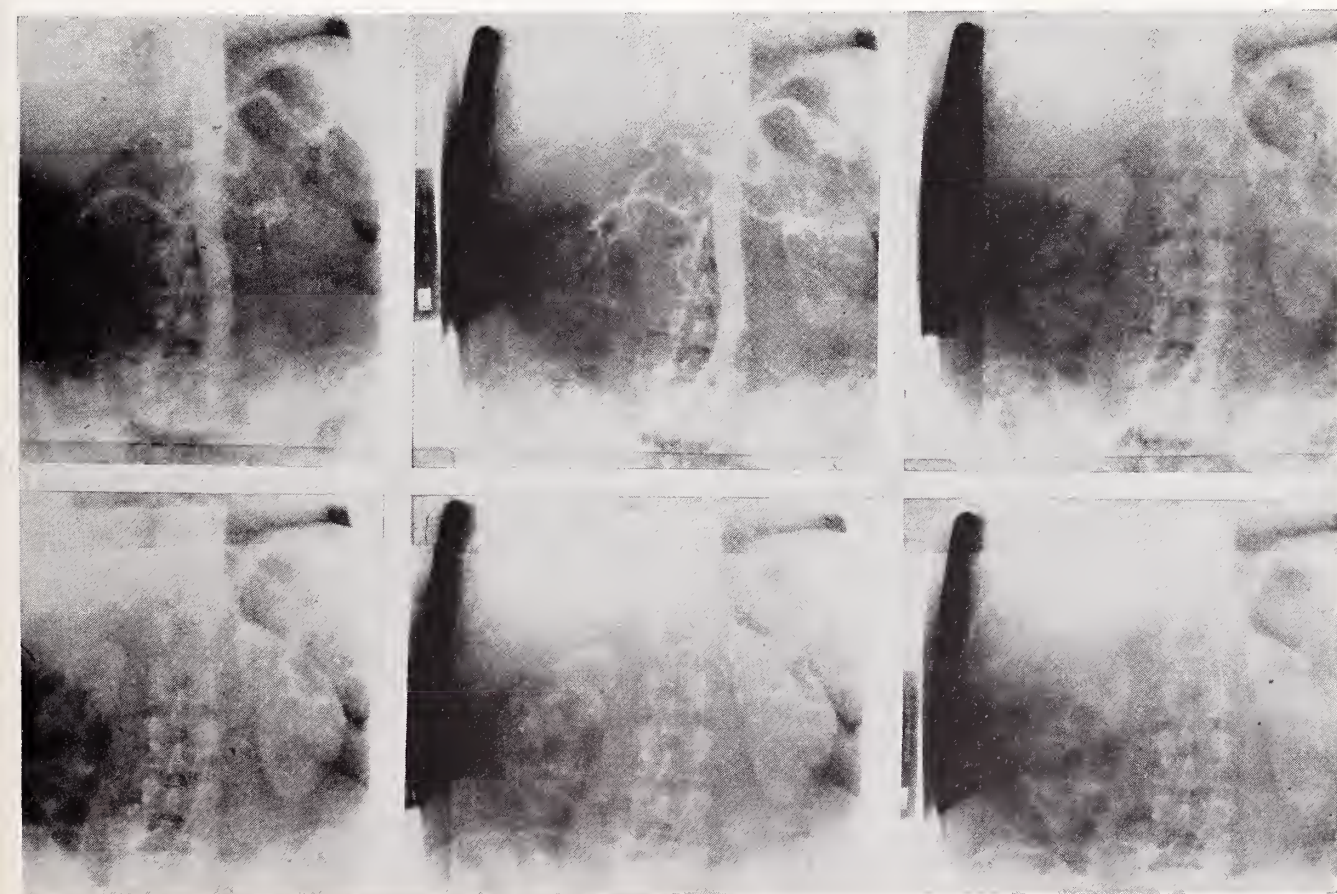


Figure 7. The Odelca seriographic technic applied to a study of the kidneys. Exposures were made at one-second intervals.



Figure 8. A study of a young adult patient with uremia and hypertension. The renal arteries were not seen in any phase of the serial radiographic study.

carrying capacity of the vessel is related inversely to the cross sectional area, so that a significant decrease in volume of blood flow may result from a small decrease in the size of the vessel. Correlation with the findings at surgery has taught us that we tend to underestimate, rather than overestimate, the severity of the stenosis seen in the roentgenogram. The physiologic effects of the cerebral ischemia have been indicated by Dr. Siekert. We are gradually learning about how much narrowing a person can have in these vessels before he exhibits appreciable clinical symptoms. Many people feel that kinking of a vessel decreases the blood flow significantly, and some have been sufficiently concerned to free up the vessel or to resect and re-anastomose it. The value of this procedure is still being investigated.

Figure 10 consists of pre- and postoperative views of a left vertebral artery. The patient was a doctor who had developed some symptoms of cerebral ischemia, had learned of these studies of ours, and so came in and had the examinations and the treatment. This was the only lesion found after a study of all the great vessels in his neck. The pre-operative view shows marked narrowing at the origin of the vertebral artery. The postoperative view (with the two metal clips) on the right shows that the lumen of the vessel has been re-

stored to normal size. For more than a year now, he has remained free of his previous symptoms of basilar insufficiency. This is at least one encouraging example of this approach to the treatment of vascular disease.

If one takes only one film during the injection of contrast material, as some laboratories do, it is necessary to inject a fairly large volume of the contrast material in order to have all the desired vessels filled at the instant when the exposure is made.

When the neurosurgeon is concerned about the location of an aneurysm in an adult, the aortic injection usually has failed to provide sufficient contrast to study the intracranial vessels. When the study is limited to one side at a time, as with a carotid or brachial injection, the contrast is usually better. The brachial approach is the most



Figure 9. Narrowing of the carotid artery at its bifurcation, and also marked kinking of the vertebral artery.

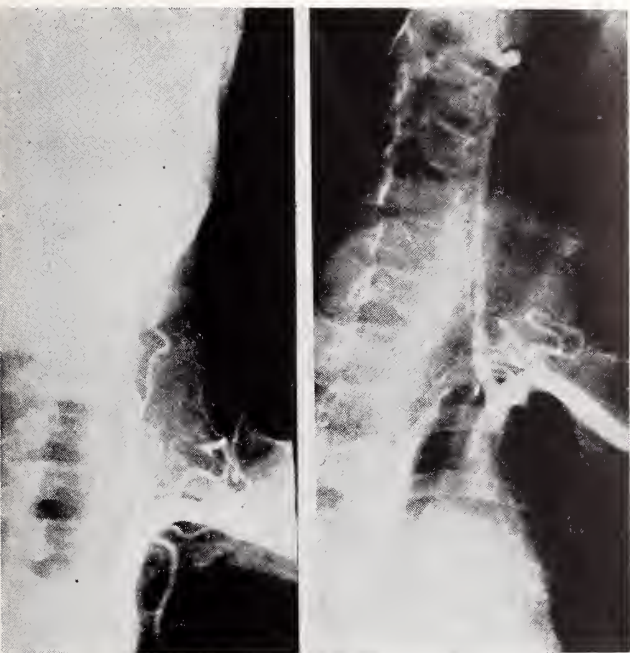


Figure 10. Pre- and postoperative views of a left vertebral artery. The picture on the left shows marked narrowing at the origin of the artery. The one on the right shows that the lumen of the vessel has been restored to normal size.

satisfactory method for demonstrating the vertebral and basilar arteries. If one could obtain satisfactory intracranial views while studying the great neck vessels, the procedure would be simplified. This is a technical avenue that we are now trying to perfect. Figure 11 shows the basilar artery and its branches demonstrated by a left



Figure 11 shows the basilar artery and its branches by means of a left brachial injection. The carotid on the left is not visualized in this way.

brachial injection. The carotid on the left is not seen this way.

Turning the head sometimes produces obstruction to one or the other of the neck vessels, usually the vertebral, cutting off the flow. This may or

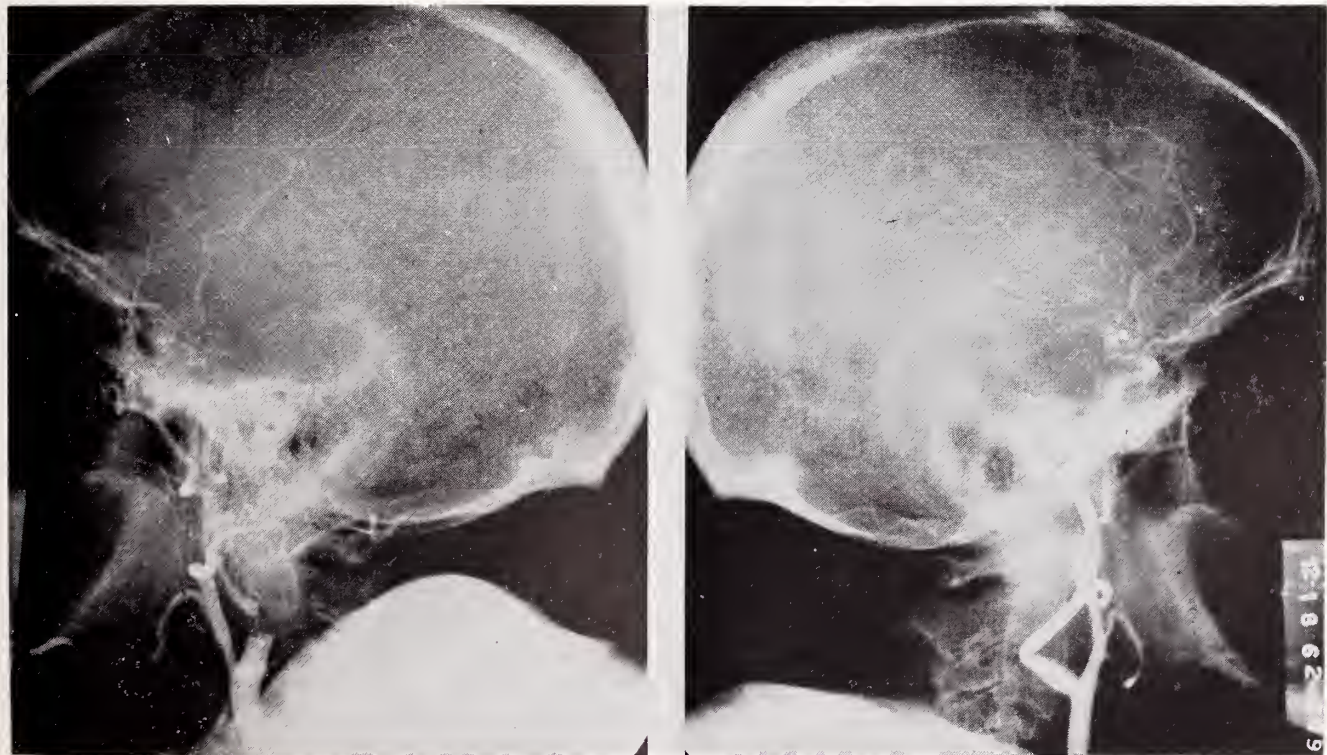


Figure 12 reveals a severe degree of narrowing of the carotid at its bifurcation on one side, and some degree of kinking on the opposite side.

may not be symptomatic, depending on the condition of the other vessels. Our patients who have been operated upon, frequently have shown bands of fibrous tissue that were the offending factor. The etiology of these bands is still a matter of theory. It makes a nice story however, to consider that where arthritic ridges and spurs develop, new lines of stress develop in the connective tissue. This could be a factor in the laying down of bands that previously were not there.

Figure 12 reveals a severe degree of narrowing of the carotid at its bifurcation on one side, with almost complete occlusion of the internal carotid on that side and some degree of kinking of the internal carotid on the opposite side. This patient had been experiencing intermittent "strokes." A few years ago this type of lesion was quite frequently discovered in arteriograms done on patients because of suspected brain tumor or subdural hematoma. Clinicians have learned to use the stethoscope over the great vessels of the neck and the renal vessels particularly, so that vascular lesions are now being suspected and diagnosed more commonly before the arteriogram is done.

Since we are not able to do routine arteriograms of everyone's great neck vessels, such screening methods are particularly desirable.

In collaboration with us, Dr. Faris made a study at the prison in Lansing to determine what changes might be found in the great neck vessels of asymptomatic adults. All subjects in the Lansing study were carefully screened to establish freedom from all known vascular disease, or clinical symptoms of vascular disease. A battery of laboratory tests was employed in addition. A statistical analysis of these findings is being prepared for publication, and Dr. Faris thinks that the study may help to answer the question, "How much disease can a man have in his great neck vessels before one should expect it to produce symptoms?"

A multiplicity of lesions seems to be the rule rather than the exception, and similar angiographic defects are of varying clinical significance in various patients.

A complete study of the cerebral vasculature serves as a major key to an understanding of these problems, we think. This is the role of the radiologist in this program.

Surgical Treatment of Arteriosclerosis

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and

MICHAEL E. DEBAKEY, M.D.

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ARTERIOSCLEROSIS clinically assumes two forms, aneurysm and arterial obstruction. In the former, the disease involves the media, causing certain destructive changes which lead to arterial dilatation and eventually to rupture. In the latter, the pathologic changes, consisting of hypertrophy, deposition of lipid substances and thrombosis, occur primarily in the intimal layer of the arterial wall. These changes produce arterial obstruction and arterial insufficiency of the part supplied by the affected artery. Such well known clinical entities as cerebrovascular disease, myocardial insufficiency or infarction, hypertension, abdominal

angina, mesenteric thrombosis, and arterial insufficiency of the extremities, particularly the legs, are frequently due to this form of the disease.

These significant pathologic changes associated both with aneurysm and occlusive disease are usually well localized, with reasonably normal proximal and distal arterial segments. All aneurysms and many occlusive lesions are located in the proximal arterial system either in the aorta or more peripheral arteries. These fortunate pathologic characteristics permit the application of arterial reconstructive procedures to replace aneurysms and to restore blood flow to organs distal to the obstruction. The former is accomplished by excision and repair or graft replacement, and the latter by endarterectomy or bypass graft. This report is concerned with the experience of the members of the Department of Surgery, Baylor University College of Medicine, in the application of this form of therapy in the treatment of patients with the two types of arteriosclerotic lesions.

ANEURYSMS

Most arteriosclerotic aneurysms are fusiform in nature, involving the entire circumference of vessel wall. In some patients the aneurysm may be

Dr. Crawford and Dr. DeBakey are staff members of the Cora and Webb Mading Department of Surgery, Baylor University College of Medicine, Houston. Dr. Crawford made this presentation at the Mercy Hospital Medical Day program, in Des Moines, on November 10, 1962.

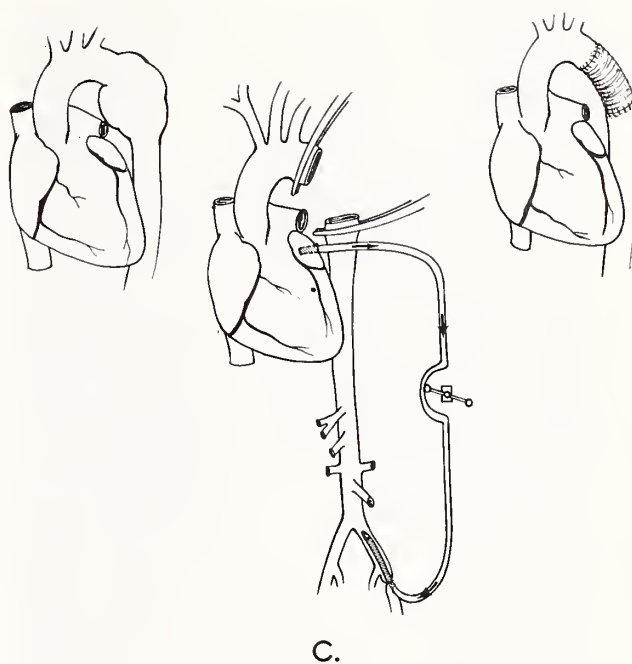


Figure 1. Illustrations of patient with aneurysm of descending thoracic aorta treated by excision and graft replacement. Aortogram (a) and diagram (b) show location, size and extent of aneurysm excised by means of atrium to femoral artery bypass (c). Aortogram (d) and diagram (e) show graft in place and functioning.

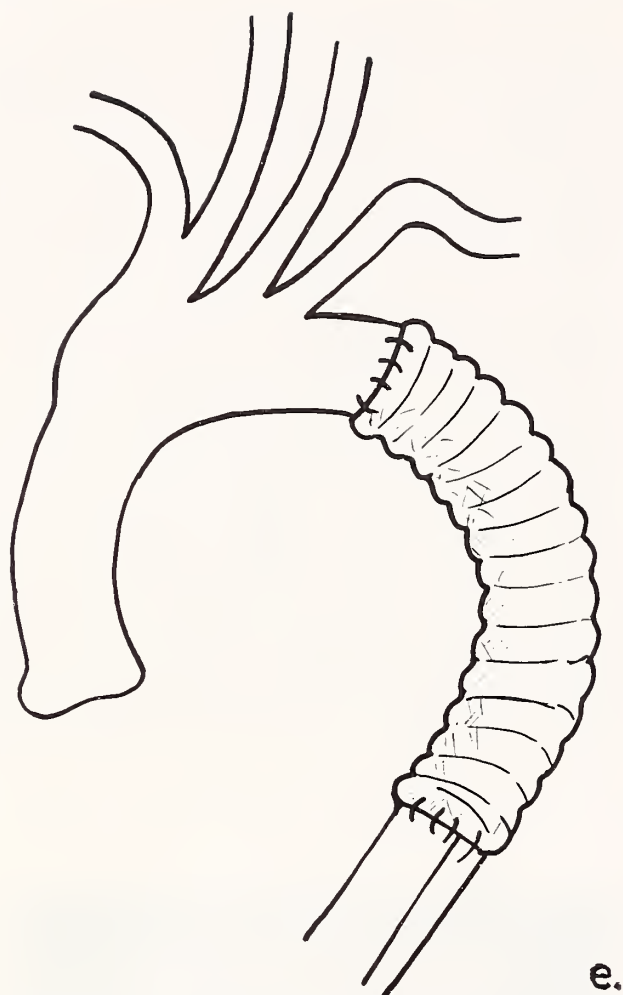


Diagram of graft in descending thoracic aorta. (See legend on preceding page.)

sacciform, involving only a part of the circumference, and in others it may be of the dissecting type. All aortic and major arterial segments are susceptible to aneurysmal involvement; however there are certain characteristic sites, including the thoracic aorta distal to the origin of the left subclavian artery, the abdominal aorta distal to the origin of the renal arteries, the common femoral arteries and the popliteal arteries. Involvement of the aortic arch in the region of the great vessels is fairly common, and proximal involvement of the abdominal aorta in the region of the visceral branches, such as celiac axis, superior mesenteric, and renal arteries is relatively uncommon. Involvement of the carotid, subclavian, and axillary arteries is rare.

The disease usually occurs after the age of 40, predominantly in the sixth, seventh, and eighth decades of life. The ratio of men to women is 10 to 1. Because of the age of the patient and the nature of the disease, associated conditions are frequent, occurring in over a third of patients. These include heart disease, hypertension and associated occlusive disease. These conditions im-

pose certain risks to operation; however, it is generally agreed that death from rupture occurs in most patients within a relatively short period after onset of symptoms. For this reason, excisional therapy is recommended in virtually every case. The problems involved in the application of this form of therapy are dependent upon the location of the aneurysm.

THORACIC AORTA

Aneurysms of the thoracic aorta may be manifested by chest pain, hoarseness, airway obstruction, and dysphagia; however, the diagnosis is determined in most cases by chest roentgenograms made in the course of general examination. The pain of dissecting aneurysms is fairly characteristic, beginning in the anterior chest, radiating to the back between the shoulders, and then, later, down into the abdomen. Pulses may occasionally disappear, and chest roentgenograms may appear normal or show only a widened mediastinum. The diagnosis of thoracic aneurysm is confirmed and its extent localized by angioaortography (Figures 1, 2).

The descending thoracic aorta distal to the left subclavian artery is the most common site of thoracic aneurysm, regardless of type (Figures 1, 2). Proximal blood pressure is controlled and distal circulation beyond the region of operation is maintained by one of two methods. In cases with large aneurysms arising near the left subclavian artery, one end of a catheter is inserted into the left atrium and the other end inserted via the common femoral artery proximally into the iliac artery (Figure 1c). A rotary pump is applied, and oxygenated blood is pumped from the atrium into the circulatory system beyond the region of operation. In patients with small aneurysms arising several centimeters distal to the subclavian artery, one end of the catheter may be inserted into the aorta via the subclavian artery proximal, and the other end into the thoracic aorta distal to the region of operation (Figure 2). This method is simple, it eliminates the need of heparinization, and it confines the operation to the chest. With either of these shunts in place and functioning, clamps are applied proximally and distally, and the aneurysm is excised and replaced by a graft. The shunt is then removed.

More proximal involvement of the aorta requires a different type of shunting procedure, depending upon great vessel involvement and proximity to the heart. Aneurysms arising from the ascending aorta adjacent to the heart must be bypassed by means of the artificial heart lung machine, and when the great vessels are involved, the carotid arteries as well as the distal aorta, must be perfused. Aneurysms arising several centimeters beyond the heart are preferably bypassed during operation by means of temporary bypass grafts, in order to avoid the need for

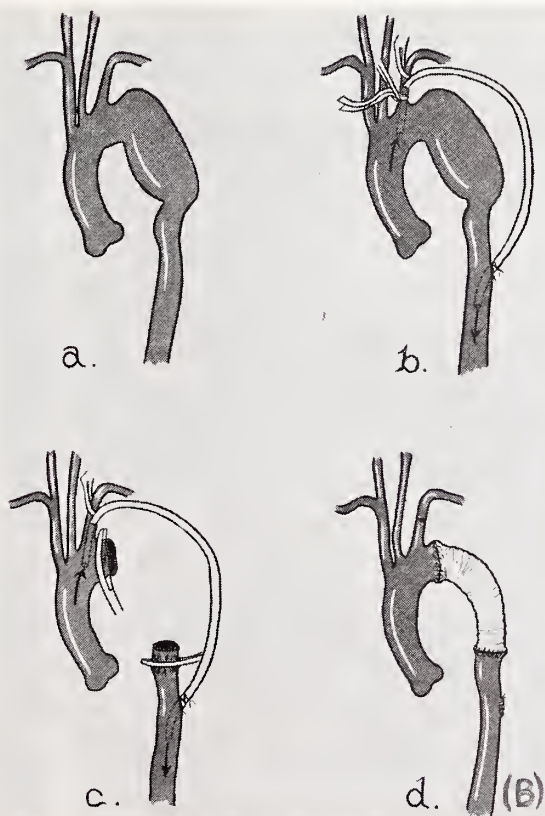
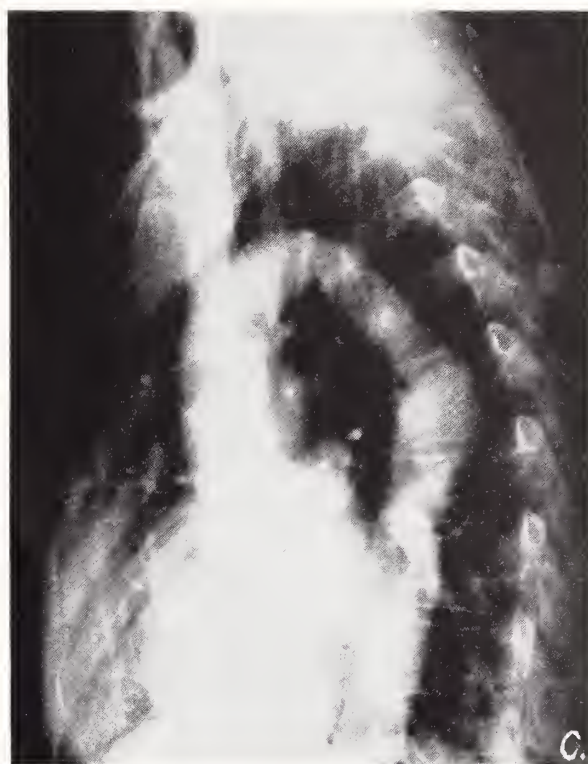
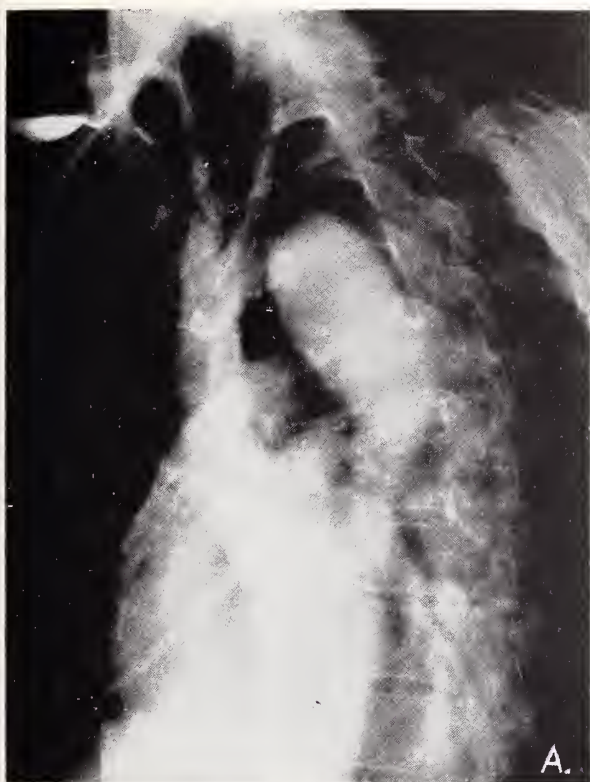


Figure 2. Patient with small aneurysm of descending thoracic aorta illustrating temporary subclavian to distal aorta tube shunt to maintain distal circulation during operation. Aortogram (a) made before operation using temporary tube shunt (b), and aortogram (c) made after operation, showing graft in place and functioning.

complete heparinization (Figure 3). Using partial occlusion clamps and end-to-side anastomosis, one end of the graft shunt is attached to the side of the ascending aorta proximally, and the other end or ends of the shunt are attached to the aorta and involved great vessels beyond the aneurysm. After removal and graft replacement of the aneurysm, the temporary shunt is removed.

This form of therapy has been employed in the treatment of 484 patients with thoracic aortic aneurysms of all types at all locations. The results of operation varied in consequence of many factors, including age, presence of associated disease, experience, and location of the aneurysm. Survival occurred in 43 per cent of patients with fusiform aneurysms involving the arch; in 67 per cent with fusiform aneurysms of the descending thoracic aorta; and in 69 per cent with dissecting aortic aneurysms. Long-term survival has been good. For example, 65 per cent of all patients submitted to operation for dissecting aortic aneurysms are still alive.

ABDOMINAL ANEURYSMS

Abdominal aortic aneurysm may be asymptomatic and evident on routine physical examination as a pulsatile mass in the abdomen, or in stout patients by a broadened abdominal aortic pulsation. In some, the disease may have been noted by the patient as a very prominent abdominal pulsation, e.g.: "My heart seems to have dropped down." In some patients there is mild or moderate pain and tenderness in the region of the mass, and in others this may be severe and

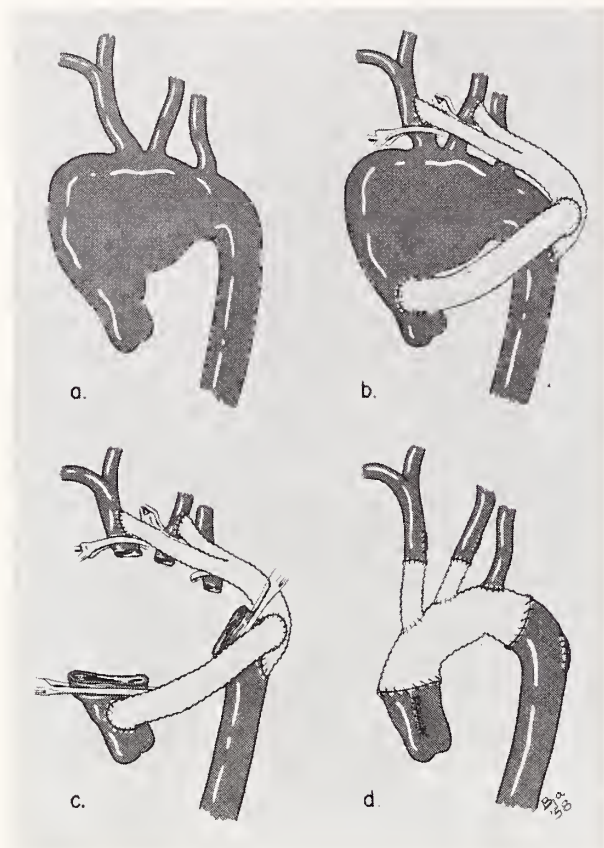


Figure 3. Diagrams illustrating method of excision and graft replacement of aortic arch aneurysm using temporary bypass graft shunts.

extend into the back, groin, or flank. Pain and tenderness indicates either rupture, particularly in the presence of hypotension, or active changes in the aneurysmal wall which soon will lead to rupture. The diagnosis is evident by the presence of a broadened aortic pulsation or definite mass. Laminated clot usually fills the extra space inside the aneurysm, and thus the effective lumen inside the aneurysm is usually quite normal. The abdominal aortogram showing normal-size lumens is frequently not extraordinary. This method of examination is therefore not useful in these cases, unless associated occlusive disease of the visceral or peripheral arteries is suspected. Plain anteroposterior and lateral roentgenograms of the abdomen are very useful. The wall of the aneurysm frequently contains calcium deposits, and abnormal aortic calcification shadows are seen frequently in the plain roentgenograms.

Because of the poor prognosis of the untreated disease, excision and graft-replacement are indicated in virtually every case. These are accomplished simply. The normal vessels are exposed and temporarily clamped both above and below the aneurysm. The lesion is then excised and replaced by the appropriate graft (Figure 4). The clamps are removed and distal circulation restored. The operation is completed by closing the wound.

In a small number of patients the aneurysm may involve the segment of abdominal aorta in the region of origin of the celiac axis, superior mesenteric artery, and renal arteries (Figure 5). Such aneurysms frequently are large and extend up through the diaphragm to involve the lower end of the thoracic aorta. This location is suggested by the size of the aneurysm, its high location in the abdomen, and the presence of thoracic extension seen on routine chest roentgenograms. The aortic lumen is dilated in such cases, and aortography is useful in studying the extent of such lesions.

Aneurysms in this area are best treated by excision and graft replacement, including the origin of the great vessels of the abdominal viscera. This is accomplished by first inserting an end-to-side bypass graft extending from the mid- or lower-thoracic aorta above, to the uninvolved aorta or iliac arteries below. Appropriate tubes are attached to the side of this graft as branches. The left renal artery is transected, and the uninvolved distal end is attached to the end of one of these branches. The aneurysm is removed between clamps. The transected aorta above and below the aneurysm is closed by suture, distal circulation being maintained permanently by the bypass graft. The right renal artery is next attached to a branch of the graft, and finally the superior mesenteric and celiac arteries are attached. The operation is completed by closing the thoraco-abdominal wound.

Operation has been employed in the treatment of 1,568 patients with abdominal aortic aneurysms located beyond the renal arteries, with an overall survival rate of 93.4 per cent. The aneurysm had ruptured at time of operation in 116 patients. Despite the critical condition of the patient and the frequency of associated disease, 66 per cent survived. Rupture had not occurred in the remaining 1,452 patients, and survival occurred in 95.4 per cent, indicating the advantages and safety of early operation. Excision and graft replacement was employed in the treatment of 42 patients with thoraco-abdominal aneurysms and 64 per cent of them survived.

PERIPHERAL ANEURYSMS

As previously indicated, peripheral arteriosclerotic aneurysms are usually located in the common femoral artery in the groin or in the popliteal artery behind the knee. Although multiple involvement in these areas is frequent, occurring in about half of the patients, involvement of other peripheral arteries such as the carotid and subclavian is very rare. Peripheral aneurysms may become complicated by either rupture or thrombosis, both of which lead to local pain and arterial insufficiency of the part supplied by the involved artery. Thus, the most common problem imposed by peripheral aneurysms is arterial insufficiency of the lower extremities.

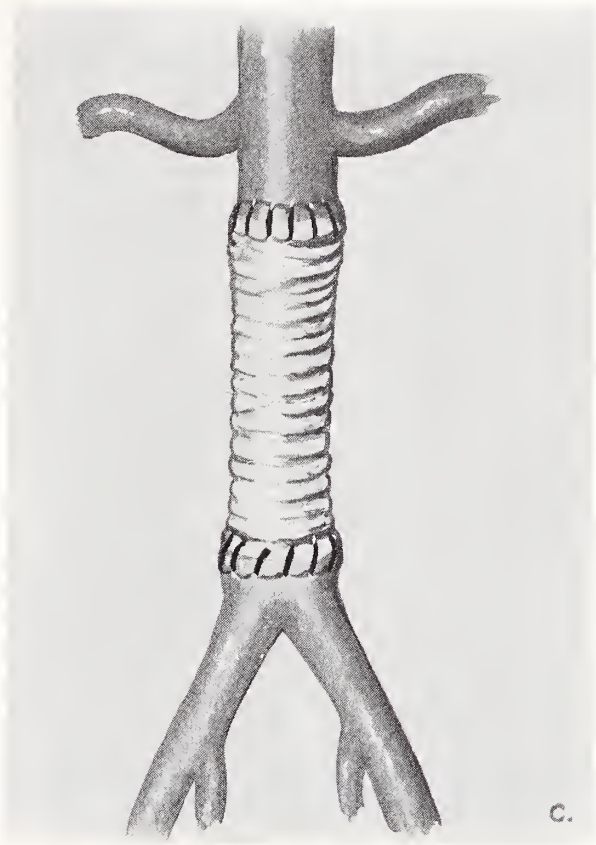
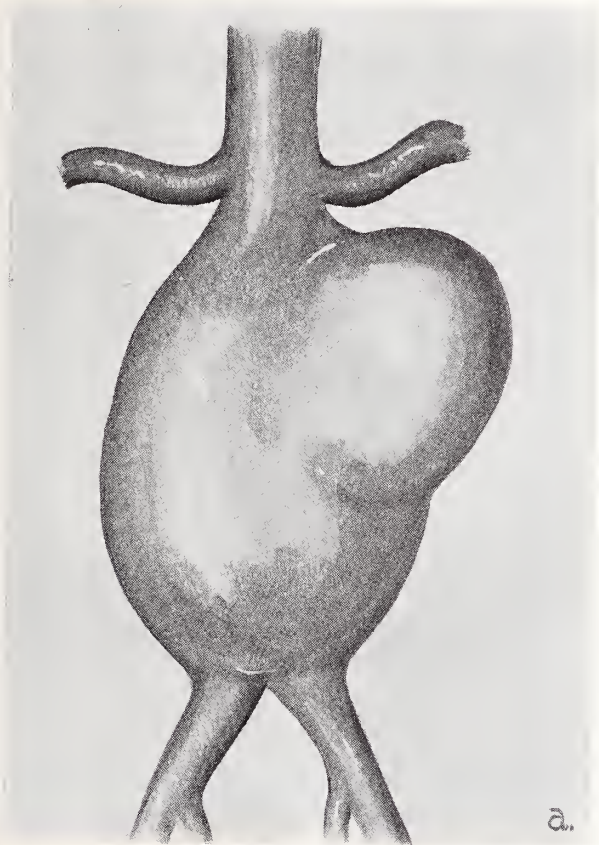


Figure 4. Abdominal aortic aneurysm treated by excision and Dacron graft replacement. Diagram (a) and photograph (b) show extent of aneurysm. Diagram (c) and photograph (d) show location of graft.

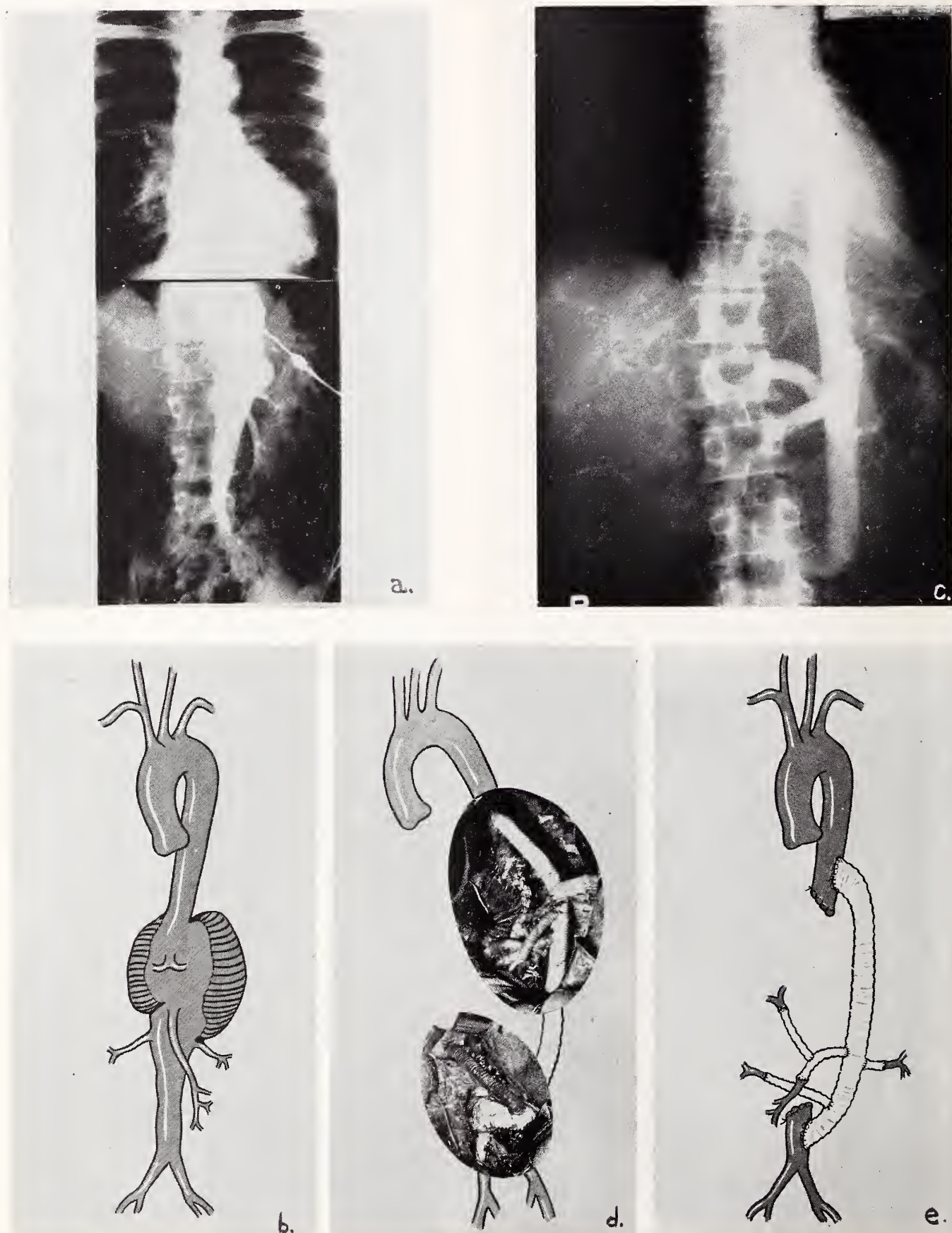


Figure 5. Thoraco-abdominal aneurysm involving celiac axis, superior mesenteric and renal arteries treated by excision and graft. Aortogram (a) and diagram (b) show location and extent of aneurysm. Aortogram (c), photograph (d), and diagram (e) show location of grafts.

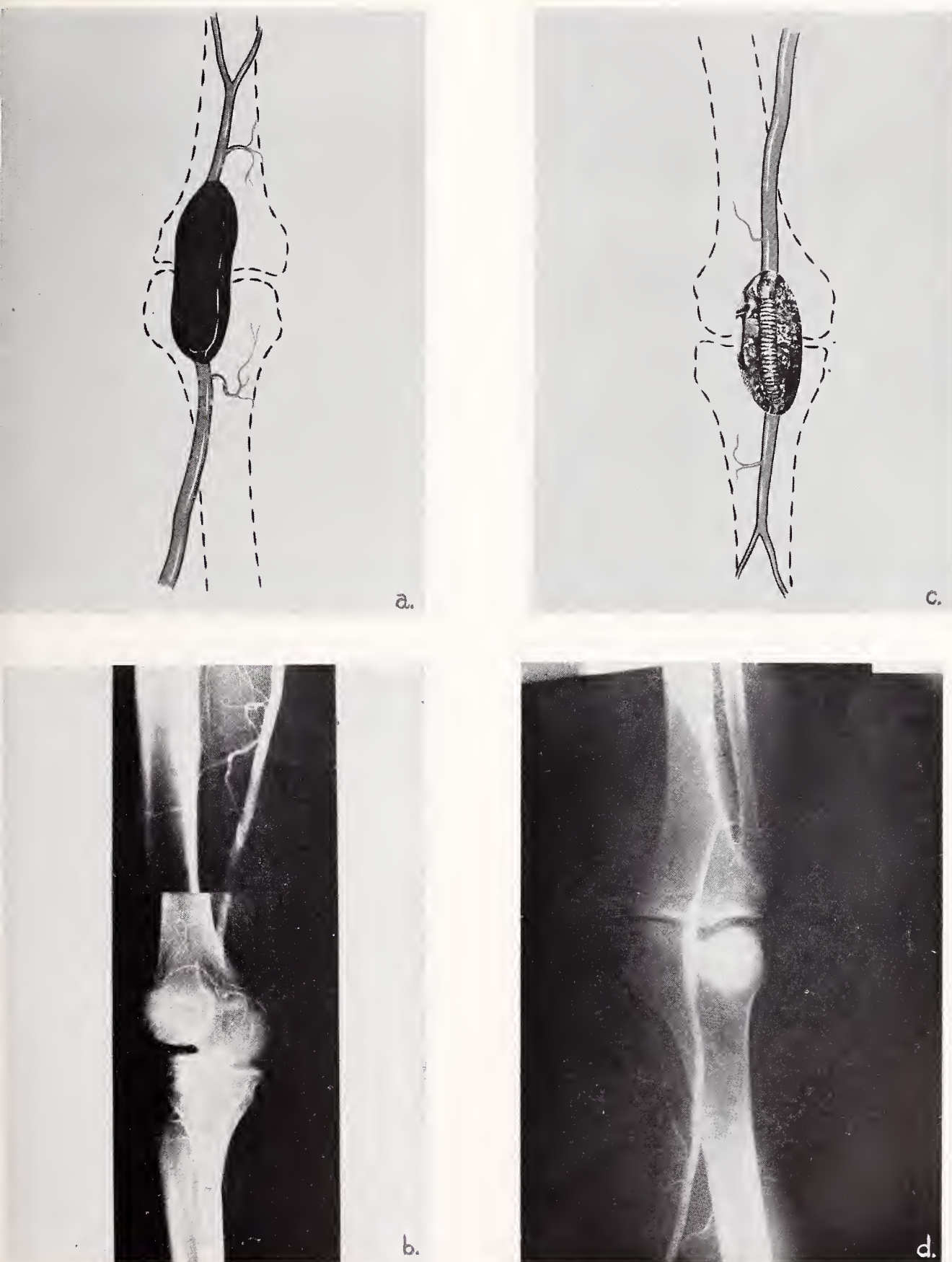


Figure 6. Thrombosed popliteal artery aneurysm treated by excision and graft replacement. Diagram (a) and arteriogram (b) show extent of aneurysm. Photograph (c) and arteriogram (d) show graft in place and functioning.

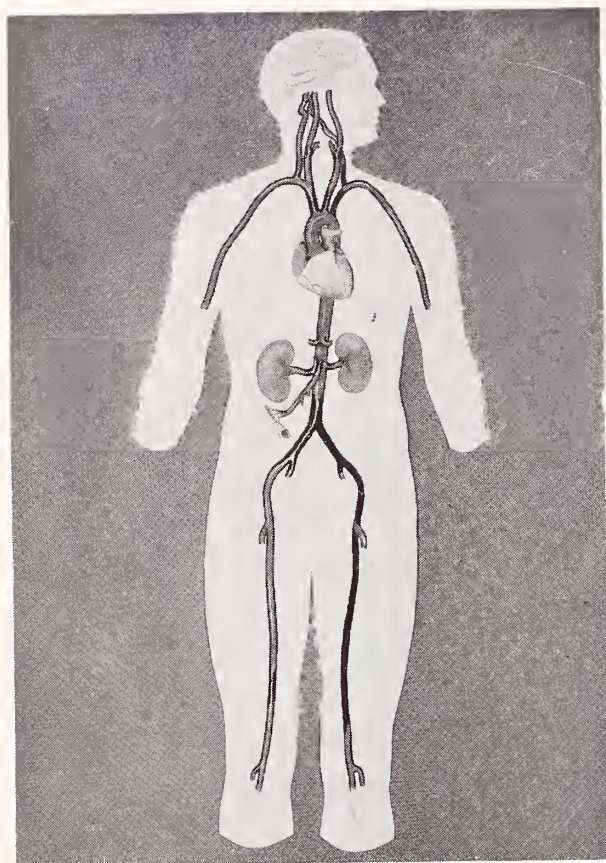


Figure 7. Diagram showing (in black) the principal sites of atherosclerotic occlusion.

The diagnosis is made by palpation of the arteries in the groin and behind the knee. An abnormally prominent or broad pulsation or a pulsatile mass indicates aneurysm. Pulsation ceases with thrombosis, and a thrombosed aneurysm is indicated by absent distal pulses and a tender firm mass in either the groin or the popliteal space. The signs of rupture include tenderness, swelling, and discoloration.

Operative therapy, because of its simplicity and safety, is indicated in all patients with peripheral aneurysm, either to relieve or to prevent the development of arterial insufficiency. The procedure employed is dependent upon the extent of disease. Small aneurysms may be excised and arterial continuity restored by end-to-end anastomosis of the uninvolved arterial segments. Large aneurysms are excised and replaced by grafts, which may be extended to bypass associated occlusive lesions distal to the aneurysm (Figure 6). Moreover, this procedure employing grafts may be used to bypass thrombosed peripheral aneurysms with extensive proximal and distal thrombus.

These procedures have been employed in the treatment of 165 peripheral aneurysms in 105 patients. Operation was employed electively in 65 patients with good peripheral pulses for 110 aneurysms. Surgery was successful in all but one patient. He died of air embolism. In 40 patients operation was employed for 55 aneurysms associated with complications causing absent pulses and ar-

terial insufficiency. Operation was successful in the treatment of 50 aneurysms. Amputation was required in only three cases. The patients have been followed since discharge, and the grafts have continued to function satisfactorily. No patient is known to have had an amputation.

OCCLUSIVE DISEASE

Arteriosclerotic occlusion consists of the typical atheroma with or without superimposed thrombus. These lesions occur primarily at the origin or bifurcation of arteries. Although any vessel may be involved, these lesions assume certain characteristic locations of surgical significance, namely the innominate, common carotid, subclavian, vertebral, and internal carotid arteries, causing cerebral arterial insufficiency; the coronary arteries, causing myocardial insufficiency; the celiac and mesenteric arteries, causing postprandial pain and malnutrition; the renal arteries, causing hypertension and eventual renal failure; and the distal aorta, iliac, femoral, and popliteal arteries, causing arterial insufficiency of the lower extremities (Figure 7). This form of disease may occur at any time in adult life, but the greatest incidence is in the fifth, sixth, and seventh decades. Males are affected about ten times as often as females. Multiple lesions are frequent, but fortunately all or most all of the significant occlusions may be operable. Associated arteriosclerotic disease, therefore, may be an indication rather than a contraindication to operation. For example, a patient may have both cerebrovascular disease and insipient gangrene of a foot. First, by one operation in the neck or upper chest, the cerebrovascular disease may be relieved, and then, at a second operation on the abdominal aorta, circulation may be restored to the lower extremities.

The present diagnostic and therapeutic approach is discussed according to the site of obstruction and clinical entity produced.

INNOMINATE, CAROTID, SUBCLAVIAN, AND VERTEBRAL ARTERIES

Routine arteriographic study of all patients referred to us for symptoms of cerebrovascular insufficiency has shown that the occlusive lesions causing reduction in blood flow and symptoms have been located extracranially in the neck or upper chest in approximately 40 per cent of the cases, and most of these have been susceptible to reconstructive operation. These lesions may be located near the origin of the internal carotid artery and cause contralateral motor and sensory deficits; at the origin of the vertebral arteries and cause basilar insufficiency symptoms, including bilateral visual disturbances, bilateral motor and sensory deficits alternating from one side to the other, and vertigo; or either near or at the origin of the innominate, common carotid, and subclavian arteries and cause either one or both of the previously described patterns of symptoms. Finally, multiple arterial involvement is frequent,



Figure 8. Occlusion of internal carotid artery treated by endarterectomy and patch graft angioplasty. Arteriogram (a) and diagram (b) show extent of obstruction. Arteriogram (c) and diagram (d) show good arterial lumen after operation and location of patch.

occurring in approximately 75 per cent of cases; consequently, symptoms are not diagnostic. Extracranial involvement is suggested by pulse and blood pressure changes in the arms, pulse changes in the neck, and the presence of systolic murmurs in the neck and supraclavicular regions; however, these findings may be absent in many cases. For these reasons, arteriographic visualization of all segments of cerebral circulation is performed in all cases to localize the lesion or lesions accurately. This approach has been justified by the fact that arteriography has been associated with significant complications in less than 1 per cent of the cases.

Circulation is restored or improved either by endarterectomy or bypass graft, depending upon the location of the lesion. Obstruction of the vertebral and internal carotid arteries is treated by endarterectomy (Figure 8). The involved vessel is exposed and temporary clamps are applied at points proximal and distal to the disease. A longitudinal incision is made in the artery in the region of obstruction. The diseased intima is removed, and the arterial wound is closed by inserting a patch graft to prevent narrowing. The patch is sutured circumferentially to the edges of the arterial incision.

Occlusion of the innominate, common carotid, and subclavian arteries is treated by end-to-side bypass graft, since these lesions are frequently extensive, beginning at the aorta and extending distally for varying distances (Figure 9). Using partial occlusion clamps and end-to-side anastomosis, as previously described in the insertion of temporary shunts in the treatment of aneurysm, the surgeon attaches one end of the graft to the side of the ascending aorta proximally and attaches the other end or ends of the graft, depending upon the number of vessels involved, to the patent arterial segment distally. The latter anastomosis is usually made through a separate incision in the neck or supraclavicular regions. In such cases, the graft is placed in a tunnel made by blunt dissection connecting the wounds.

This form of therapy has been employed during the past ten years in the treatment of 724 patients with all manifestations of cerebrovascular insufficiency. Of these, 679 (94 per cent) survived operation, and over 90 per cent of them were still alive when last reviewed. Relief of symptoms occurred in 83 per cent of patients with transient stroke and in 96 per cent with progressing strokes, and 79 per cent of patients with completed stroke were either relieved or markedly improved.

CORONARY ARTERY

Methods for detailed and accurate arteriographic visualization of the coronary arteries are now available, and have proved to be both practical and safe. These studies indicate that coronary artery lesions are frequently segmental and local-

ized to the major coronary artery branches. It seems reasonable to assume that these lesions are susceptible to arterial reconstructive operation, and others have reported a limited number of successful operations. Although considerable work has been done in our laboratory, we have just begun clinical work in this area. Endarterectomy and patch graft angioplasty, completely restoring normal coronary arterial lumens, was successfully performed in two patients during the past two months. In both patients with severe angina pectoris, the lesions were well localized by arteriography. With cardiopulmonary bypass, the hearts were arrested, the lesions easily removed, and the arterial incisions closed by insertion of venous patch grafts. At the end of operation, upon normal perfusion of the coronary arteries, a normal heart beat resumed. This combination of arteriography, cardiac support, and small-vessel surgical technics is opening a new era of cardiovascular surgery, and it is anticipated that many patients with coronary artery disease will be successfully treated in the immediate future.

CELIAC AXIS AND SUPERIOR MESENTERIC ARTERIES

The clinical manifestations of occlusion of the celiac axis and the superior mesenteric arteries are postprandial pain, weight loss, malabsorption, and systolic murmurs in the epigastrium and mid-abdomen. These findings vary considerably from patient to patient. In some, all manifestations may be present to a severe degree. The pain may be so severe that the patient fears to eat or drink, and weight loss and malabsorption may be extreme in such cases. In other patients, the manifestations may include only mild pain after heavy meals. Abdominal murmurs are absent in about half the cases.

In general, the disease is chronic or has been present for months or years when first suspected. Multiple roentgenographic examinations of the gallbladder and gastrointestinal tract will have already been performed and found normal, or symptoms will have persisted or will not have completely disappeared after the treatment of some disease detected by those examinations.

Diagnosis is suspected from the clinical manifestations and is established by abdominal aortography performed in the lateral position (Figure 10). The condition is completely relieved by restoration of normal circulation. This is accomplished by inserting bypass grafts extending from the abdominal aorta proximally to the patent segments of artery distal to the region of obstruction. This method of therapy has been successfully employed in the treatment of 18 patients with gratifying results.

RENAL ARTERY OCCLUSION

It is now well known that renal artery occlusion is a relatively frequent cause of hypertension. In patients with known arteriosclerosis, renal ar-

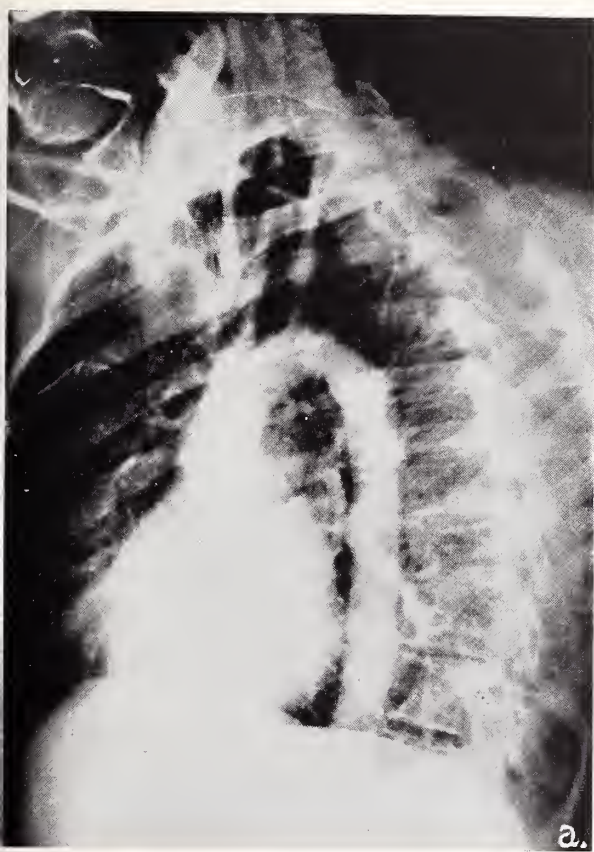


Figure 9. Occlusion of innominate and left common carotid artery treated by bypass graft. Arteriogram (a) and diagram (b) show extent of obstruction. Arteriogram (c) and diagram (d) show location of grafts.



Figure 10. Obstruction of celiac axis, superior mesenteric, renal, and iliac arteries treated by bypass graft. Aortogram (a) and diagram (b) show location of occlusive disease. Aortogram (c) and diagram (d) show location of grafts.

tery occlusion may be the cause of hypertension in approximately 40 per cent of cases. The condition should be suspected also in all young patients with unexplained hypertension and in any patient who suddenly develops hypertension without obvious cause. Although systolic murmurs are heard in the upper outer abdominal quadrants and in the flanks of a few patients, renal artery involvement is rarely noted clinically. Urinalysis is usually normal. Intravenous pyelography is frequently normal; however, in some cases of unilateral involvement the affected kidney may be smaller than the other, and the excretion of contrast substance may be delayed. The diagnosis is made by aortography (Figures 11, 12). We feel that all patients with unexplained hypertension should have aortographic examination both because of the frequency with which these lesions are not detectable by other means and because significant complications are extremely rare. In fact, in our experience, death or significant complication has occurred in only 0.1 per cent of the last 2,500 examinations.

In patients with renal artery occlusion normal hemodynamics are restored by a variety of operations, depending upon the location and extent of obstruction. Patients with lesions localized to a short segment of the renal arteries, particularly at their origin, are treated by endarterectomy and patch graft angioplasty, as described previously (Figure 11). Lesions involving the renal arteries more diffusely are preferably treated by an end-to-side bypass graft extending from the abdominal aorta proximally to the patent segment of renal artery located beyond the obstruction (Figure 12). Diffuse unilateral lesions associated with complete renal artery obstruction and infarcted kidneys are treated by nephrectomy. Lesions involving a branch of the renal artery may be treated by total or partial nephrectomy, removing the affected kidney. An arterial reconstructive operation is the preferable method whenever possible, in patients with renal artery obstruction, because it conserves renal tissue and because the occlusive lesions are bilateral in 35 per cent of the cases.

This method of therapy has been employed in 250 patients. Many of these people had associated heart disease, severe hypertension, aortic aneurysm, uremia, cerebrovascular disease, and arterial insufficiency of the lower extremities. The operative survival has been 95 per cent, and 80 per cent have been completely relieved and 10 per cent have been improved.

AORTA, ILIAC, FEMORAL, AND POPLITEAL ARTERIES

The obstruction in most patients with arterial insufficiency of the lower extremities is located in the aorto-iliac area, in the superficial femoral arteries, or in the popliteal arteries. Obstruction may be complete or incomplete, but in most in-

stances the distal vessels are patent, permitting an arterial reconstructive operation. The clinical manifestations are well known and include intermittent claudication, rest pain, night pain, and cutaneous changes of the feet. The most important physical finding indicating the presence and location of obstruction is the presence, absence, or diminution of arterial pulsations in the groins, popliteal fossa, posterior tibial and dorsalis pedis areas. Systolic murmurs may be heard in the lower abdomen and groins of patients with partial occlusion of the aorta and iliac arteries. The location and extent of obstruction are determined by aortography performed in a manner permitting visualization of the abdominal aorta, iliac, femoral and popliteal arteries with a single injection of contrast medium.

Blood flow is restored by various technics, depending upon the location and extent of obstruction. The occasional very discrete lesion well localized to a short segment may be treated by endarterectomy and patch graft angioplasty. In most cases the occlusive process is diffuse and is preferably treated by end-to-side bypass graft (Figure 13). In patients with aorto-iliac occlusion, the graft extends from the aorta above the lesion to the common femoral arteries below the disease. In patients with femoral and popliteal obstruction, the graft extends from the common femoral artery above, to the patent popliteal segment below the obstruction (Figure 14).

During the past 11 years this form of therapy has been employed in the treatment of 2,901 cases with arterial insufficiency of the lower extremities. Of these, 97.3 per cent survived operation, and circulation was successfully restored in 94 per cent with aorto-iliac obstruction, and in 90 per cent with femoral and popliteal artery occlusion. Amputation was required in only 3 per cent of cases, although about 33 per cent were otherwise destined for early amputation. Follow-up studies have recently been completed in 95 per cent of the cases submitted to operation, and continued success of operation persisted in 94 per cent of patients with aorto-iliac and 85 per cent of patients with femoro-popliteal operations, either to the present time or until death from other causes.

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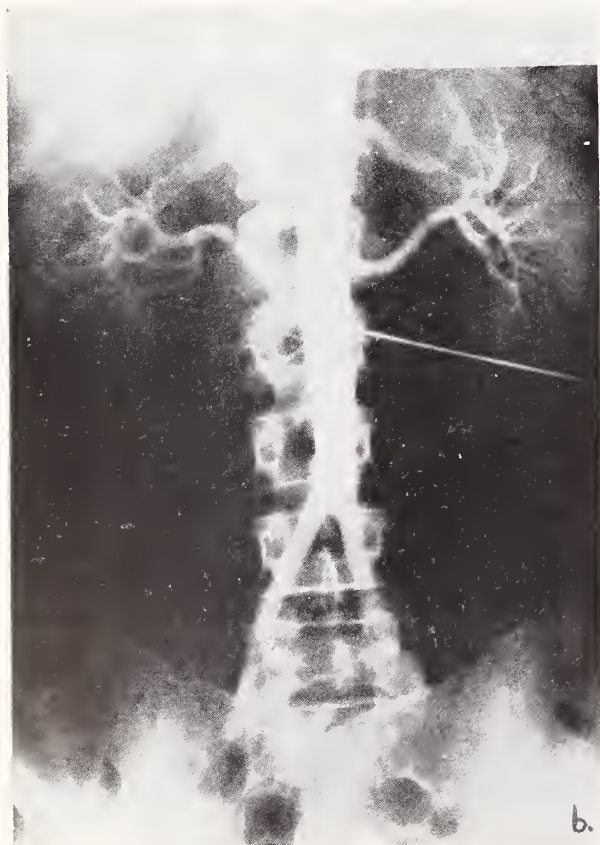
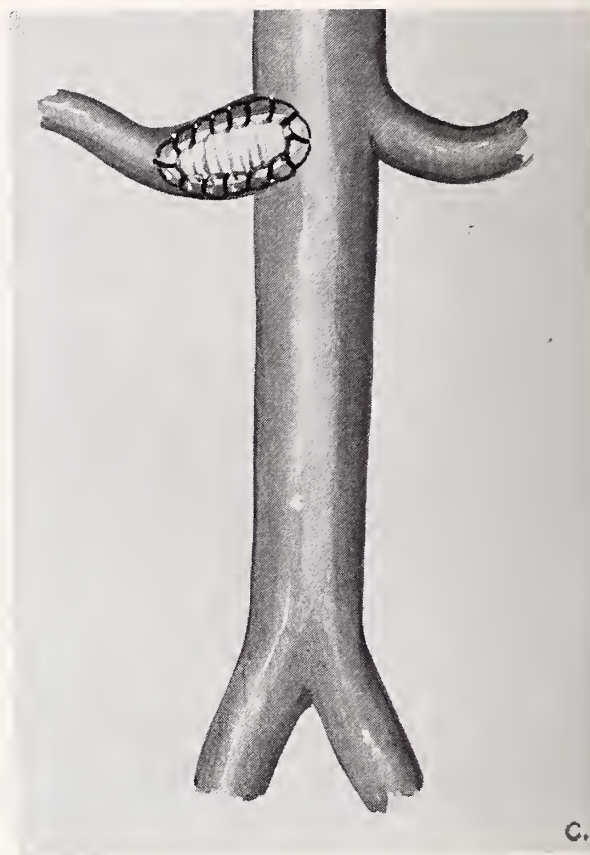


Figure 11. Obstruction of left renal artery treated by endarterectomy and patch graft angioplasty. Diagram (a) and aortogram (b) show location and extent of obstruction. Diagram (c) shows location of patch graft, and aortogram (d) shows patent left renal artery.

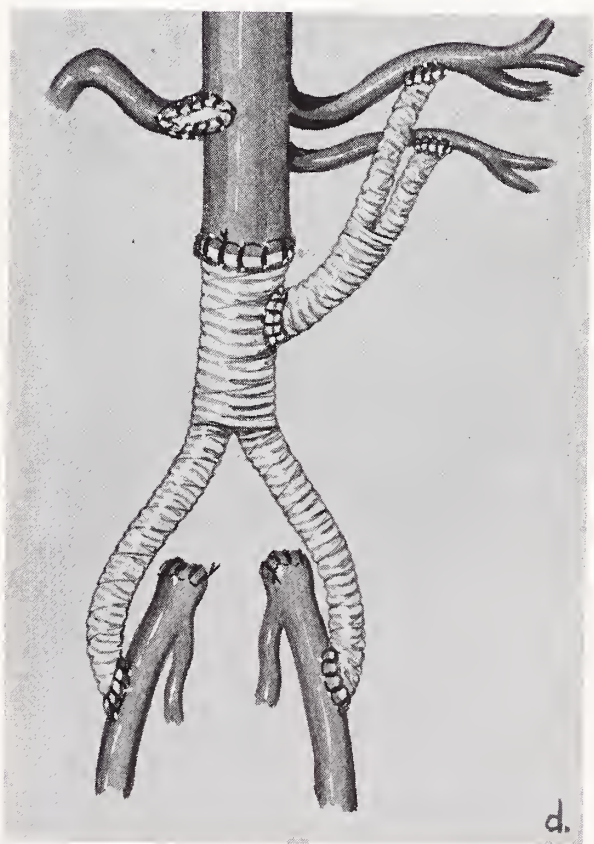
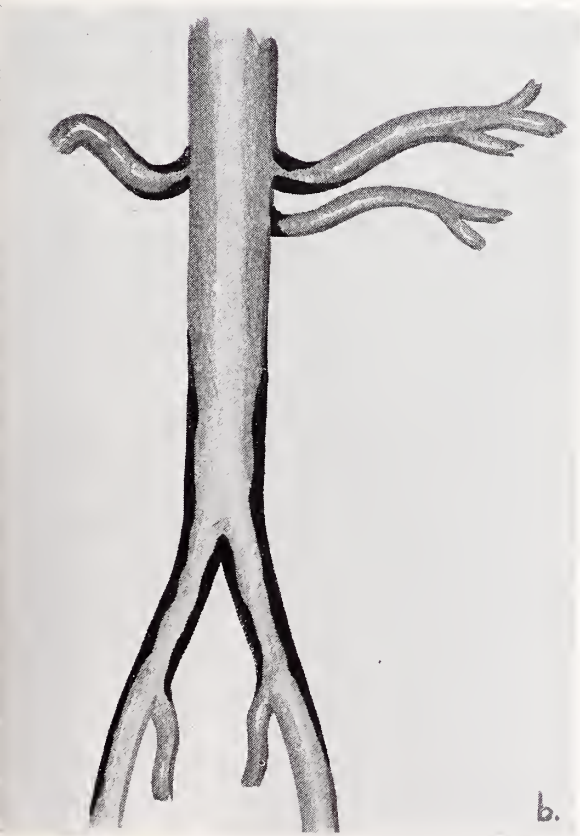
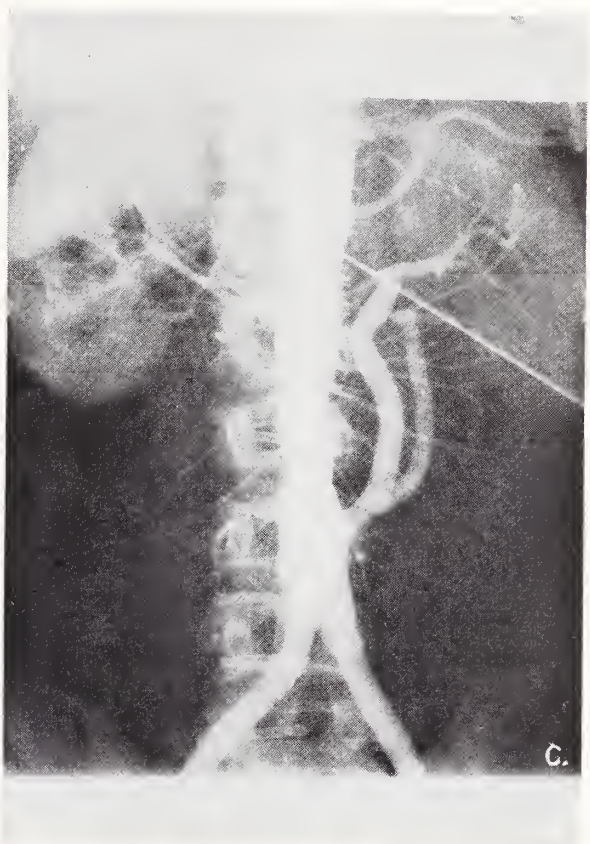
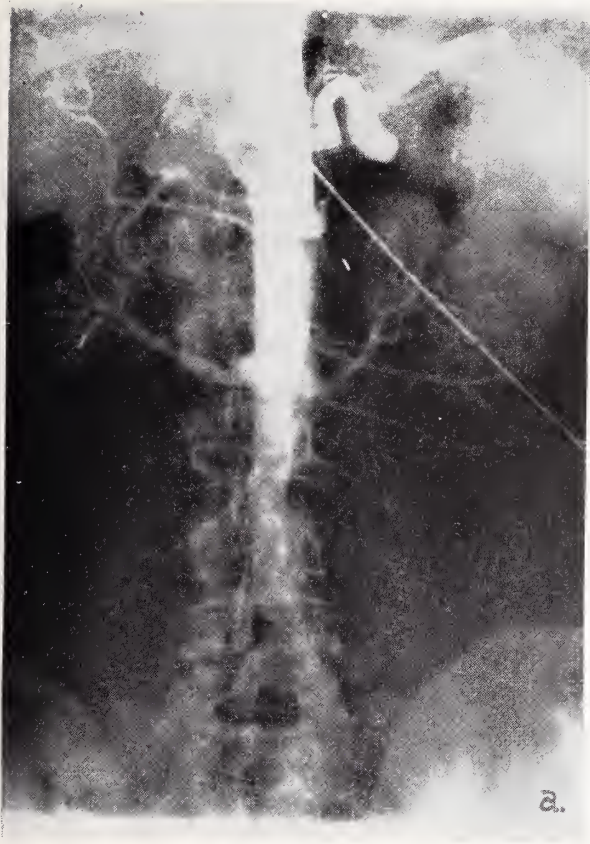


Figure 12. Bilateral renal artery obstruction treated by endarterectomy on right, and bypass graft to both renal arteries on left. Aortogram (a) and diagram (b) showing extent of obstruction. Aortogram (c) after operation showing widely patent channels. Diagram (d) showing location and nature of operation.

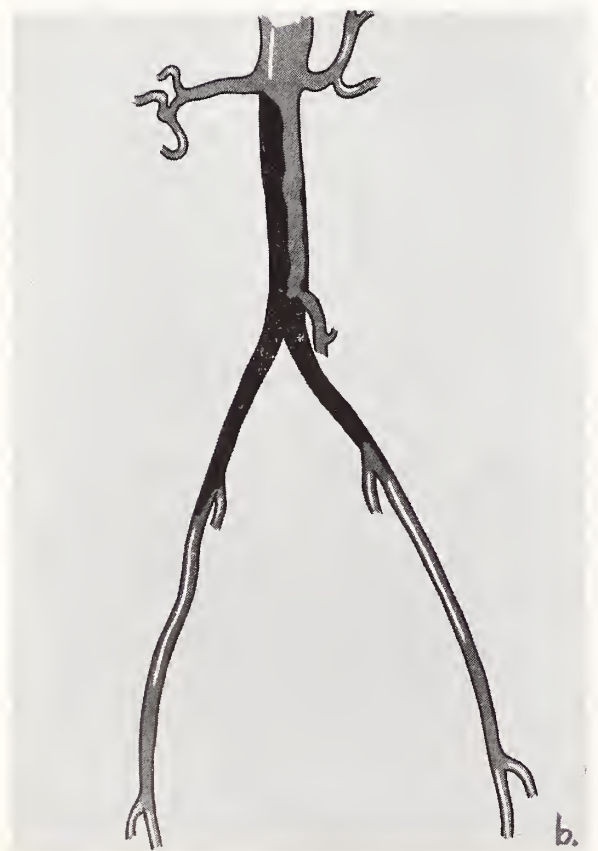


Figure 13. Complete obstruction of distal aorta and iliac arteries treated by bypass graft. Aortogram (a) and diagram (b) showing extent of obstruction (in black). Aortogram (c) made four years after operation and diagram (d) show location of graft.

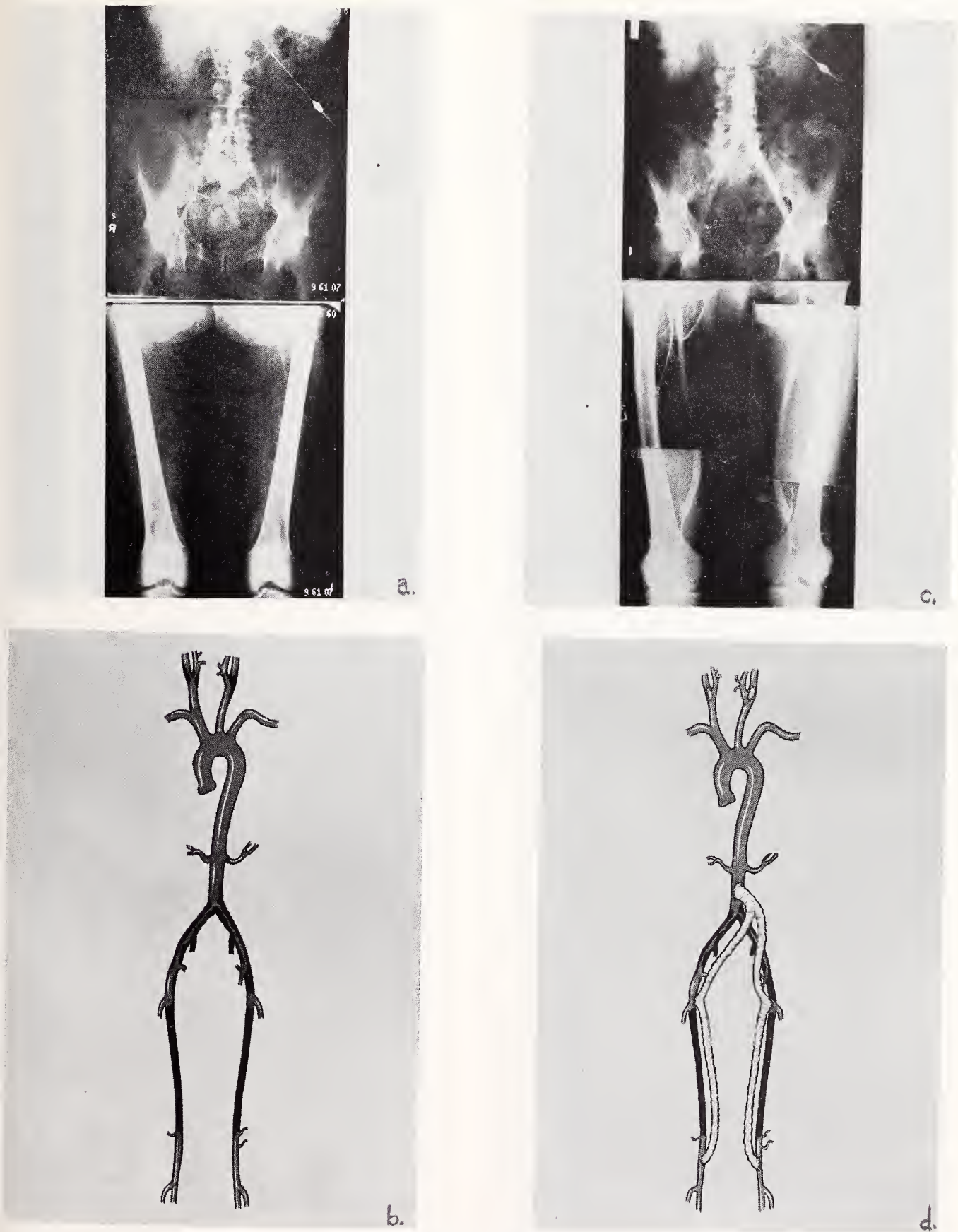


Figure 14. Illustration of bypass graft procedure in patient with bilateral occlusion of the superficial femoral arteries. Aortogram (a) and diagram (b) showing (in black) location of occlusion. Aortogram (c) and diagram (d) showing grafts in place and functioning.

Mercy Hospital Medical Day

Questions and Answers

Dr. Robert C. Hardin, dean, S.U.I. College of Medicine: To summarize what has been said today would take quite a bit of time, and also, I think, it is unnecessary because of the excellence of the presentations. Thus, I shall go right ahead with the questions that have been handed me, trying to keep them in some sort of order which will make discussion easier.

The first question I think is directed to Dr. Connor: "What is the relationship of smoking to atherosclerosis?"

Dr. Connor: As far as I know, there is no direct relationship between smoking and atherosclerosis. In animals, experimentally, smoking has been shown to produce lung cancer, but it has not caused atherosclerosis. There is, however, a relationship between smoking and death from coronary heart disease. The problem arises especially in an individual with an already ischemic myocardium. In such a person, I presume that smoking may be a participant in a final occlusive episode, through a fatal arrhythmia because of the vasoconstrictor properties of nicotine, or perhaps through the enhancement of blood coagulation in a way that is not completely understood at the moment.

Dr. Hardin: Dr. Youngstrom, you referred, I believe, to disturbances in cardiac mechanism by arteriography. Is this thought to be due to the contrast material itself, or to the pressure of injection?

Dr. Youngstrom: It is thought to be due to the contrast material itself, because similar studies without the contrast materials did not produce similar cardiac arrhythmias or disturbances.

Dr. Hardin: This isn't a matter of anoxia?

Dr. Youngstrom: That's right.

Dr. Hardin: Dr. Connor, again: "Has the study of low blood cholesterol diets proceeded far enough to demonstrate that people have a lower incidence of coronary thrombosis after eating such food?"

Dr. Connor: This approach is being tried in a number of population groups throughout the United States. Since coronary heart disease develops over a lifetime, there has not as yet been sufficient time to demonstrate effects on the incidence of coronary heart disease. In general, both high-risk individuals and ones who already have had occlusive episodes are being given dietary treatment designed to lower the serum lipids.

Dr. Hardin: I might say that the interest we have at S.U.I. in the study of the Japanese group arose,

in part, out of a previous study in which a group of juvenile diabetics were followed for long periods of time, and the blood cholesterol levels of those individuals were known over periods of several years. We also knew the levels of cholesterol in these patients' diets, and although the number is not statistically significant, we found that after 17 years, electrocardiographic changes began to appear in some of the diabetics, and they appeared only in those diabetics whose cholesterol intake was above 1,500 mg./day, which is about twice the average intake. All of these people had high blood cholesterol levels consistently over a period of years. The group was not large enough to have any significance, but as a result of that study we became interested in the Japanese.

To dispose of the Japanese, as far as this afternoon is concerned, here is one more question: "Whereas the Japanese have a low incidence of coronary artery disease, they have a high incidence of carcinoma of the stomach. Do you feel that there are dietary factors involved in the latter?" In other words, do you want to eat cholesterol and have heart disease, or leave it out and have cancer of the stomach?

Dr. Connor: Perhaps the choice is not so clear-cut as the question suggests, I really have no information as regards a possible connection between the Japanese diet and carcinoma of the stomach. I think carcinoma of the esophagus may be fairly high in this group, too, and that it may be related to the drinking of large quantities of hot tea. Certainly it may be possible to avoid carcinoma of the stomach and at the same time avoid coronary heart disease. We hope so.

Dr. Youngstrom: I'd like to comment about the Icelander study by the public health department where they have a diet of smoked fish that produced carcinoma of the stomach in a statistically significant group. The disease was related directly to the people's diet of smoked fish.

Dr. Hardin: The Japanese eat raw fish, I seem to recall.

Dr. Siekert, do you advise lumbar puncture prior to instituting anticoagulant therapy for cerebrovascular occlusive disease?

Dr. Siekert: Not as a routine measure. I think that this is a very helpful laboratory test in patients whose clinical pictures are uncertain as to diagnosis. In those instances, in which the diag-

nosis was uncertain, we would be reluctant to start anticoagulant therapy anyway.

Dr. Hardin: Dr. Youngstrom, your slides demonstrate carotid and vertebral arterial lesions. Why were no basilar artery lesions shown?

Dr. Youngstrom: My display of films did not include all of our studies. Basilar artery disease, and particularly the basilar artery itself, poses a rather hopeless problem surgically. The few cases of pathology in this area that we have seen, I didn't happen to include. Most of the surgically approachable lesions are in the lower part of the vertebral artery, and I consequently chose to show those.

Dr. Hardin: Dr. Crawford, how do you feel about the use of anticoagulants in the long-range post-operative management of obliterative arterial disease, for example of the carotids?

Dr. Crawford: We have not recommended its use. A large percentage of our patients were referred for operation in the first place because they had been on anticoagulants and either hadn't improved or had become worse. A vascular surgeon who came here from England and his medical associate were interested in trying to postpone some of the recurrent trouble in femoral-popliteal reconstructive operations. I have forgotten the precise details, but in approximately a five-year study with two large groups, in one of which surgery had been performed and in the other of which it had not, they used anticoagulants in an attempt to protect the operation. At the end of the period they found that if there was any improvement in the protection of the treated cases, it was a very slight one. The complication rate rose, however, and though that increase was slight too, it was greater than the improvement in protection. So they came to the conclusion that the use of an anticoagulant was not a protection of an operation. From a scientific point of view, if one can stretch it that far, our practice has been based on that study. I don't know whether the work to which I refer has been published or not, but it is what we have accepted.

Now when it comes to an argument about it, with the referring physician, we don't argue one bit. If he wants to put the patient on anticoagulants, we raise no objection.

Dr. Hardin: That is the attitude of most vascular surgeons, I'll agree. But the attitude has changed, hasn't it?

Dr. Crawford: No, sir, it has not changed. If there has been any change, I can say that surgeons have become increasingly reluctant to use anticoagulants.

Dr. Hardin: That's what I mean. When this kind of surgery was started, there was a trial of anticoagulation.

Dr. Crawford: We all did it at first, and we did it really in the operating room. It required us to do two-stage operations. We had to go back the next day to take out the clots, so we stopped using it in the hospital very early.

Dr. Hardin: Dr. Crawford, again: "Given a pa-

tient with angiographic proof of obstructive renal vascular disease with hypertension, is the Howard test a 'must' before surgery?"

Dr. Crawford: I don't believe that it is a "must," because one can depend upon the results of the test in somewhere around 70 or 75 per cent of the cases. If one has positive results and can be sure that the study was really a good one, it is quite helpful in telling the patient and his doctor that he almost certainly has a lesion that is a factor in his hypertension, and that by taking it out or fixing it up you can be almost sure to get good results. There are certain limitations, and in our experience in about 30 per cent of the cases it would not be a good test.

Dr. Hardin: What gauge are the so-called "spaghetti" catheters?

Dr. Youngstrom: They come in a variety of sizes. In addition to the clear Teflon catheter which I displayed, the Becton-Dickinson Company has developed radiopaque Teflon of several sizes. We use sizes 8 and 9 French—which cover most of our needs. This company is also making radiopaque vinyl catheters.

I should also mention the Karras needle that is ground to a round, conical point, instead of a bevel. This is used for brachial arteriography, by inserting the needle itself at a rather acute angle to the artery, piercing the artery—impaling it, virtually—and drawing the needle back until the flow is definite. Then the needle is threaded up the artery, and an injection is made directly through this needle. The pump injector is applied directly to this long needle, and the column of contrast material is forced to flow all the way to the aorta. This usually allows the demonstration of the carotid and vertebral arteries only on one side, so that one must do both sides in order to do a complete study. Even then, a retrograde injection of the left carotid artery usually is required to demonstrate its origin. We are doing more of this type of study. The method does have merit in that it is a simplification of the procedure, may speed up the examination, and does avoid the complications related to the passing of a catheter.

Dr. Hardin: Dr. Siekert, the next question is: "Isn't heparin preferable in long-term anticoagulant treatment of patients?"

Dr. Siekert: The problem here is the ease of administration. Some people have felt that heparin might be a better or more efficacious drug, in that it might have some properties in addition to its anticoagulant effect that might make it worthwhile. However, it is so difficult to administer on a long-term basis, and the use of Depoheparin is unpredictable. Its administration as an emergency measure, of course, is another matter. I think most anticoagulationists would at present prefer one of the coumarin drugs for long-term anticoagulant therapy.

Dr. Connor: The use of subcutaneous aqueous heparin has recently, in our hands at any rate, seemed most useful in the treatment of thrombotic

disease. In this particular technic, the patient simply lifts up the skin and gives himself an injection into the subcutaneous tissues, much as a diabetic gives himself an injection of insulin. This has seemed, to begin with at any rate, to produce some desirable results as an anti-thrombotic measure. The patient can self-administer this medication in doses of 5,000 to 10,000 units, one to three times, on an outpatient basis. I think it is fair to say that this approach is experimental at the moment, but it does seem promising. Have you have any experience with that, Dr. Siekert?

Dr. Siekert: Is this better than coumarin? What is your basis for saying that it is better?

Dr. Connor: The basis is an unpublished experimental work in dogs, producing thrombosis in a jugular vein by electrical procedures. Heparin by the subcutaneous route in these animals seemed better than coumarin preparations which had been administered to the point of producing spontaneous bleeding. Thus there is some evidence that heparin is superior to coumarin drugs as an antithrombotic agent.

Dr. Hardin: Dr. Siekert, have you had any experience with the thrombotest technic in place of the prothrombin time in controlling anticoagulant therapy?

Dr. Siekert: I'm not familiar personally with the use of Owren's test.

Dr. Hardin: Is there anyone on the panel who is?

Dr. Connor: We've tried it and haven't found it superior to the one-stage prothrombin time. There is considerable controversy in the literature about this test, but it seems to me that more people are still relying on the one-stage prothrombin time.

Dr. Hardin: Dr. Crawford, how many of your cases have developed a second aneurysm, requiring a second surgical procedure?

Dr. Crawford: We've had some, but offhand I don't know how many. We have had some false aneurysms develop at suture lines. As regards the older grafts, say the homografts, we've had some of them deteriorate and form an aneurysm. And there have been patients whom we treated for aneurysm at one level who later developed aneurysm at another level. But as to the numbers, I don't know, except that as complications of the operation, they have been relatively rare.

We think that one of the advantages of using the knitted Dacron graft, the type of graft that we have used for about 5½ years, is that it doesn't fray, and one of the factors that leads to false aneurysms is thus eliminated. Secondly, wound infection is a cause of wound disruption, including arterial anastomoses, and we find, even in the presence of an infection, where an abscess forms, creamy yellow pus exudes when open, and even though there may be hemorrhage at the suture line, that by using this graft we can reoperate and reattach that graft, at a little lower level. We'll have strength in the region of the anastomosis, and sew up the area and leave this open for a period of time, usually around five days, packing the wound with the graft completely exposed,

packing it as one would for any other acute wound infection, until it begins to granulate and turn pink. Then if we go back at a second operation and sew it up very tight, almost invariably the wound heals and the operation remains successful. This has been my experience, during a little over four years, and I am one of those who has done this longest. If one uses some of the other forms of graft, one can't leave them exposed in that fashion.

Dr. Hardin: Dr. Connor, a recent review of coronary artery disease shows three times as many "coronaries" (i.e., myocardial infarcts) in smokers as in non-smokers. What explains this high incidence?

Dr. Connor: I can only amplify the answer that I gave previously, indicating that probably in the face of extensive coronary disease, additional factors may produce a fatal thrombosis, a fatal episode of myocardial infarction, or myocardial infarctions with survival. What these are, I have no positive proof. To add one other point, lipemia apparently has been related to smoking. That is, the blood lipids increase transiently after smoking. Lipemia has been associated with an increased propensity of the blood to clot. For example, in animals certain fatty acids will produce experimental thrombosis. Pathologists, when they examine the hearts of smokers and non-smokers, find extensive lesions in both groups.

Dr. Hardin: Dr. Crawford, in a complete occlusion of a carotid, how can one operate without knowing the length of the obstruction, or without knowing the presence of an obstruction more distally?

Dr. Crawford: If it is in the common carotid artery, one just can say from experience that in practically every case the artery is open distally, because there are branches, and the obstruction usually does not extend beyond the bifurcation. In some instances it does, but in most cases it extends up to the bifurcation. Retrograde flow through the external carotid artery into the internal carotid artery keeps it localized, somewhat as in patients with obstruction of the distal aorta and iliac arteries. It is a rare patient with disease at that level who doesn't have an open segment distally. The same thing applies to the carotid artery when the major obstruction is located in the common carotid. Now if it is the internal carotid artery that is completely obstructed, it is a question of time. If more than a matter of hours have elapsed, one can be certain not only that it is extensive—that is, extending up into the head—but that this thrombus has begun the organization process. It has become brittle and adherent to the wall, and it does not come out like the worm to which I compared it. But somewhere within 24 hours after a stable deficit has developed, this clot remains unattached and not brittle, and can be extracted. That it is essentially a timing situation, I think would be the proper answer.

Dr. Hardin: You wouldn't hesitate to explore, anyway?

Dr. Crawford: If the patient had a complete

hemiplegia—couldn't move his arms or legs, if he was aphasic and if the condition was 24-hours old and if he had a complete obstruction—I would not operate, because the chances of restoring flow would be extremely poor, and if we could restore flow in such a patient, the chances of significant recovery would be quite slight.

Dr. Hardin: "What experiences have you had with triparinol in the prevention of arteriosclerotic lesions in patients with high cholesterol levels?" I assume this question is addressed to you, Dr. Connor.

Dr. Connor: This is a very interesting preparation. Triparinol or MER-29, as you know, has been withdrawn from the market because of toxic side effects, but it is interesting in that it does inhibit biosynthesis of cholesterol by the liver. One of the things that people have found out about this drug is that inhibiting cholesterol synthesis does not solve the problem, because another sterol, desmosterol, which is very much like cholesterol in structure, comes out into the blood in place of the unsynthesized cholesterol. Now even in patients, as well as in animals, desmosterol has been found to accumulate in the atheromatous plaques of arteries. Thus it apparently is an atherogenic substance much like cholesterol. Some studies have been done in animals, feeding them diets to produce atherosclerosis, and giving triparinol in one group and not giving the drug to the other group. The results didn't seem to show a great deal of difference. Additional new substances designed to prevent cholesterol biosynthesis will undoubtedly be marketed, but if they produce other sterols instead of cholesterol, there is no reason to expect much success from their use.

Dr. Hardin: Has anyone else anything to say about MER-29?

Dr. Siekert: We didn't use it. You didn't mention cataracts, Dr. Connor. Do you think they were related to its use?

Dr. Connor: Yes. In addition, several patients developed impotence, which was later reported. A tendency to adrenal insufficiency was also one of the complications that may have occurred with this drug.

Dr. Hardin: That is to be expected from any drug that interferes with the synthesis of cholesterol, I guess, isn't it?

Is there any clinical evidence for any relationship between magnesium in the diet and the occurrence of atherosclerosis?

Dr. Connor: There have been some studies in rats, and there is also Dr. Schroeder's work on the "hardness of water" in atherosclerosis. As far as I can tell from the evidence, the indications are that there is no deficiency of magnesium in man. Apparently in rats you can develop atherosclerosis or produce it, if magnesium is low in the diet, but it would seem that our diet, in Iowa at any rate, is rather high in this substance.

Dr. Hardin: The last question may be interesting. It is addressed to you, Dr. Connor: "Do you use safflower oil instead of butter or margarine?"

Dr. Connor: I think I should emphasize again that the low-cholesterol diet concentrates on the reduction of foods containing cholesterol, rather than on increasing the amount of polyunsaturated fat. If one emphasizes polyunsaturated fats, safflower oil is probably no better than cottonseed oil, corn oil, soybean oil, menhaden oil or a number of others. Some of these oils are less expensive than safflower oil, and I use some of the ones that are a little less expensive.

Dr. Hardin: I have many friends who work in this field, and it is quite trying to sit down and eat lunch with three or four of them.

Are there any other questions? I'd like to ask one of my own, if I may. In all of the things that we puzzle about in medicine, we finally come to some unifying theory. We haven't done this regarding the topic we have been discussing today. We talk about arterial insufficiency as if we knew what we meant. Actually it seems sometimes to be mechanical plugging, either by a thickening of the intima or by an atherosclerotic plaque. There are other situations, however, in which no real mechanical obstruction can be demonstrated. One of these has been beautifully worked out by the group at the Mayo Clinic, in so far as treatment is concerned. My question is: What other things cause arterial insufficiency? Do we know of any other things besides mechanical blockage?

Dr. Siekert: Are you looking at me?

Dr. Hardin: Yes.

Dr. Siekert: This is a problem which has vexed us since we first became interested in the problem of transient ischemic attacks some ten years ago. I shall take just a minute to comment about the use of the word *insufficiency*. When originally used, it meant that not enough oxygen got to the cells of the brain in some focal area, and that the lack of oxygen was severe enough to cause no more than transient symptoms rather than an infarct. We still mean this. The problem is what causes it? To go to the other end of the spectrum, let's take a patient with an occluding lesion, i.e., a fully-closed artery, say the carotid artery, and who has attacks of intermittent insufficiency on that side of the brain or in that eye. Now the mechanical occlusion, is permanent, and we wondered why these patients have transient attacks. What are the factors that might be implicated in such a patient? Well, something must happen—something that is transient, in addition to the mechanical factor that lowers the resistance of the body or changes the algebraic sum so that other transient things become effective. It is known, for instance—and there have been some arteriograms shown of such patients—that some people get occlusion of a cervical artery temporarily when they turn their heads. So this is a factor. Anemia and polycythemia are factors. Some investigators have felt that anger will change the tone of the vessels, or some other thing. And there is an old statement which says "He got so mad he had a stroke." There are patients who have had strokes while smoking, or while lying in bed after a fatty meal. So there

must be a group of factors that are involved in the production of an intermittent insufficiency attack, and if prolonged enough, an infarct to the brain. If anticoagulants work, and I think they do in a high percentage of patients, this observation adds another factor, i.e., the clotting-lysis mechanism which is going on all the time in all of us; this mechanism may be altered in some way at the level of the obstructing atherosclerotic plaque. Now a roughening there may cause a situation in which clotting is more likely to occur, or to occur faster, or isn't lysed as easily. This may be the triggering mechanism for the transient attack.

In answer to the question raised, there must be at least one factor among a whole assembly of factors which turns the tide quickly. That factor isn't known at the present time. Does that answer what you had in mind?

Dr. Hardin: Yes, in part at least. What I had in mind was that the results of the use of anticoagulants are so spectacular sometimes that it is hard for me, at least, to accept the idea that this has anything to do with the clotting mechanism.

Dr. Siekert: Of course one could take the opposite view and say that because of that, a clotting factor is a very important one; we have a lot of leeway here, and the problem is unresolvable at the present time.

Dr. Youngstrom: Dr. Hardin, I might comment on some of the radiologic aspects of patients with aneurysms. There is a spasm in the vessels in the area adjacent to the bleeding. This is said to be due to the liberation of angiospastic substance from the platelets. This phenomenon is regularly seen and lasts for several days.

Another thing that has to do with the problems of the circulation is the sludging. The microphysiologists demonstrated at a recent congress, that Hypaque and other contrast materials, when injected into the blood, do promote sludging. This could be a serious problem if carried to extremes. It is one of the reasons why we like to limit the volume of the individual injections and the total amount that we use for any of these studies. We are considering using protective materials like dextran and some other substances to give further protection. Some experiments of this type have been done on dogs, to show that they permit the injection of enough contrast material to opacify the whole vascular system of the animal. So, there is a hopeful area here for the application of pharmacology.

Dr. Hardin: What percentage of patients who have the basilar-artery syndrome will have a demonstrable narrowing of the artery on radiography?

Dr. Siekert: I assume you mean intermittent insufficiency of the basilar arterial system. I don't believe the answer to that question can be given. There are two factors here. First of all, unfortunately, contrast radiographs are not 100 per cent accurate, as measured by operative or necropsy findings. Thus we have no way of stating what the

precise situation may be inside the head or in the vertebral arteries. Second, no large group of such patients has been reported. If one looks at the other carotid system and attempts to answer the question, he comes across some data which are very difficult to interpret. First of all, you will recall Dr. Crawford's comment that 40 per cent of his patients with all types of cerebral ischemia had evidence of atherosclerotic narrowing or occlusion in one or more of the arteries in the neck and chest. Now these patients all had symptoms of cerebral disease, or they wouldn't have been studied. The interesting feature about that figure is that it is the identical percentage found in a routine autopsy population. These two observations raise a number of questions, not the least of which is the relation of the atherosclerosis to the cerebral ischemia. Furthermore, of patients with carotid insufficiency, about 25 to 30 per cent will have no demonstrable arterial lesions at all on arteriography. I have earlier indicated that that percentage may not be accurate, because of the fact that arteriography is not 100 per cent accurate. So we have left, in answer to your question, a group of patients who have little or no demonstrable atherosclerosis, but who have transient ischemic attacks. Why they have them is not known. This, of course, is the point. The trouble may be in arteries too small to identify in the arteriogram. There actually has been no reported study which has related transient ischemic attacks to findings on autopsy specimens. I suppose such a study will eventually come forth, and maybe from it we shall get some data.

Dr. Hardin: Now that I have taken up administration, I can afford to show my ignorance about things medical. Have there ever been any attempts to correlate the level of blood fats with the basilar-artery syndrome, the vertebral artery syndrome?

Dr. Siekert: You mean acutely?

Dr. Hardin: Yes.

Dr. Siekert: I don't know of any offhand. Obviously, as Dr. Connor has commented, on a statistical basis, the patients who have high fats are likely to get into more ischemic trouble, regardless of which artery. I might just comment about this in reference to surgery. It may be that there are different types of arterial lesions. For instance, maybe they have different surfaces, so that when Dr. Crawford removes such a lesion and the symptoms disappear, this is a different situation from that which we find in a patient who has an atherosclerotic lesion and no symptoms. I don't know whether you have ever wondered about that, Dr. Crawford, but maybe there are different types of lesions, some of which cause symptoms and others of which don't.

Dr. Crawford: I quit thinking a long time ago. A surgeon gets into trouble when he starts thinking.

Dr. Hardin: In view of the hour and the last comment that was made, this might be a good place to stop. Let's say "thank you" again, to the panel.

The Radiation Hazard

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I SHOULD LIKE to talk to you about nuclear radiation, a topic which has been discussed very widely and a little superficially in the press. It has become the basis for some of the most popular horror stories. Facts were distorted into frightening fables frequently, in past centuries, and we now look back upon that practice with a feeling of superiority. Thus it is remarkable that our scientific age, which has helped to put a great number of old worries, particularly about diseases, into proper perspective, has also succeeded in giving erroneous and distorted concepts of some modern discoveries. Those concepts have achieved surprisingly wide acceptance. For this reason it is important—in fact necessary—for me to talk to you about this topic in straightforward and simple language.

Actually, the topic is a simple one. We can assume that the same thing is true about radiation as is true of anything else in the world—that radiation is dangerous if one gets too much of it.

NATURAL AND ARTIFICIAL RADIATION ARE SIMILAR IN THEIR EFFECTS

I should like to start by telling you something about radiation that makes the whole problem particularly straightforward. I should like to contrast the action of radiation with the much more familiar action of chemicals, one to which we are all subjected. Chemistry covers the boundary along which the inorganic world, the world which the natural scientists have now rather thoroughly explored, touches upon biological phenomena. Chemical actions influence living beings everywhere. The main thing about chemistry—and I am pointing this out to you by way of contrast—is that chemistry is complicated. You consider the biological action of molecules, and you often find that a small change in the chemical structure, the displacement or the substitution of one atom in the molecule, will turn something useful to the organism, such as a foodstuff, into a poison. Similarly, a poison can, under certain circumstances, be turned into a beneficial medicine by another similarly small change. If you look at the formula of a sub-

stance and try to guess whether it will be helpful or dangerous, there is no certain way of telling. We have to fall back on experience in practically every instance.

With radiation, we are in an entirely different situation. I am talking to you about high-energy, penetrating radiation. There are all kinds of radiation of this general description. There are x-rays; there are the radiations that the nuclei emit, the gamma rays; there are high-energy particles which themselves are portions of atoms. These particles are electrons, protons, alpha particles, etc. I could wear you out by giving you detailed descriptions of all of them. But I don't need to, because in their actions these various kinds of radiation do not depart from each other. If some kind of radiation has deposited its energy in a cell, then an effect results which depends only on the amount of energy that has been deposited. The different kinds of radiation will be deposited at different sites. "Soft" x-rays will penetrate very short distances. "Hard" x-rays will go through the whole body. Other kinds of radiation which I have described behave differently. Electrons emitted by nuclei—the so-called beta rays—have a range of a fraction, but not a small fraction, of an inch. All this means that the radiation will be deposited in different portions of the body. If the radiation comes from outside, it is only the penetrating radiation which will affect the whole body. The less penetrating radiation, of course, is stopped in the skin.

There are all kinds of nuclei which emit radiation, and these nuclei can be taken up into various organs. Some remain in the liquids in our bodies. Most of these carry some potassium, and wherever there is potassium in our systems, there is some natural radiation. There are other artificial radioactivities such as the very famous strontium, which behaves like calcium and goes into the bone. Radiation from strontium will be deposited at short distances from the surface in the bone and in the bone marrow. So various radiations can have various effects because different radiations may reach various parts of the living body.

But once a certain organ, a certain cell, a certain living tissue has been reached, the effect depends directly on the amount of radiation that has been deposited. The reason is that radiation is a highly energetic thing. Chemical agents, contrastingly, are much more gentle. They have an effect like a key in a lock. If the key doesn't fit, then there may not be an effect, and if the key almost fits, the lock may be jammed. Radiation, on the other hand, acts like a hammer. Whatever mole-

Dr. Teller, a nuclear physicist at the University of California, gave this address in Des Moines on Mercy Hospital Medical Day, November 10, 1962.

cules are reached by the radiation will be broken up, with a certain probability, and the way in which they are broken up does not depend very much on the nature of the matter.

What I have just said is not entirely accurate. Various kinds of radiation have somewhat different effects, for a number of complicated reasons. But their effects differ relatively little. It is true, however, that the great variations which we encounter in chemistry do not occur in the world of radiation.

NATURAL RADIATION HAS DONE NO DETECTABLE HARM TO MAN

Noticeable amounts of radiation have been dispersed throughout the whole surface of the earth during recent years. All of us have been exposed to it, and most of us have been frightened by it. The first thing to be known about nuclear radiation is what I have already told you—that it is very similar in action to any other kind of radiation. The second thing that you should know about it is that indeed all of us, all of the time, are subjected to all kinds of natural radiation. We have been subjected to them throughout all of our lives, and so have all of our ancestors—all of them, even before the fish left the ocean. For hundreds of millions of years, radiation has been here. Some of this natural radiation originates from interstellar space. Particles are accelerated and rain down from the atmosphere. They penetrate it. That is one source of natural radiation. Moreover, naturally radioactive substances occur throughout the earth's surface—uranium and thorium, which are present in the soil almost everywhere and which are present to a very minor extent in our food. Radioactive potassium, which I have already mentioned, is in all of the fluids in our bodies.

Actually, we know that all the artificial radiation that has been spread around in the last few years amounts only to a few per cent of the natural radioactivity to which we and all our ancestors have been exposed. This fact, in itself, should give you a very clear index of the importance of the recent, artificially produced radiation.

What does the natural radiation do to us? All I can tell you is that it has done so little that its effects can nowhere be detected. From natural sources, each year, we get a dose of one or two tenths of a unit of radiation—of a roentgen unit. We don't know whether that amount of radiation is harmful or not. In some parts of the world, there is more than the usual amount of this natural radiation. In Denver, which is a mile closer to the stars, there is quite a bit more. Moreover, natural radiation is particularly high in Colorado because there is also a great deal of uranium there. Yet this increased radiation, which exceeds the amount to which we have been subjected as a result of nuclear fallout, has produced no results that can be noticed. There are some places where natural radiation is even greater: in India, where

there are concentrated thorium deposits, and in Peru, where people have lived for ages at extreme altitudes. In no case can the harmful effect of radiation be demonstrated. Of course when you compare Hindus, Peruvians and North Americans, there are so many differences that no simple conclusions can be drawn. Yet the peoples who live in regions of high natural radiation serve to demonstrate that radiation does not have the disastrous effects that some of us have imagined.

About the effects of small doses, we know very little. About big doses we know this much—and this I told you at the very beginning—that radiation is harmful if you get too much of it. If the whole of a person's body is exposed to 1,000 r.—almost 10,000 times as much as we get each year from normal sources—he almost certainly will die. If he gets 500 r. in a single dose, his chances of survival are about 50-50. If he gets 100 r., there is some chance that he will be temporarily uncomfortable, but the possibility that he will really suffer from it, in the short run, is very small. In a small percentage of cases, however, people who have been irradiated by about 100 r. do develop malignancies. The mechanism for this is unknown.

I can tell you the argument advanced by those people who maintain that fallout is dangerous. They say that 100 r. will give cancer to a few people in every hundred, and since fallout will provide one-thousandth of that exposure, the chances that one of us will contract cancer by that means are merely reduced by a factor of 1,000. The mathematics are excellent, but the logic is faulty. There is no reason to believe—there is no experimental or theoretical proof—that a thousand times smaller dose will produce the same effect with a thousand times smaller probability. That would be about as unreasonable as to suppose that because a blow has killed a man, a million times weaker blow will kill one man in a million.

In radiation, similar doses produce similar effects, but man is complicated. To a thousand times stronger force he does not necessarily react a thousand times more strongly. Nor does he react to a thousand times weaker force with a thousand times weaker reaction. In many cases—in fact as a rule—one can say that a feeble action will have an effect from which we can easily recover. It is plausible that if one in a thousand of the molecules in a cell is destroyed, the cell will cease to function. But if only one in a million is affected, then the molecules which have been broken up are likely to be eliminated and replaced by new ones. After all, in a living being the replacement of used-up cells is the general rule. Thus there is no theoretical reason for saying that small additional amounts of radiation are particularly dangerous.

I should like to point out once more the great difference between this situation and the one we encounter in chemistry. Let us say that a new additive is introduced to preserve food, or a new

spray is used to kill insects, and that some of it gets into our food. These chemicals are not used until it has been proved that they are "harmless." But what does our government mean when it so classifies a product? It means that it has been shown in experiments that no ill effects are observable. Well, in the case of radioactive fallout, nature has provided an experiment 10 times more intensive than necessary, and of millions of years' duration, and no ill effects have been noted. Under similar conditions, a chemical certainly would be pronounced harmless.

Before the War—before we made radioactivity—Vichy water, marketed in France, carried the advertisement that it contained radioactivity. Well, the fallout scare has had one good effect: Vichy water no longer carries that advertisement. Our superstition that a little radioactivity is beneficial has been replaced by a new myth that all radiation is harmful.

Experiments have been carried out with rats and mice. Preliminary studies have shown that these wretched animals live 10 per cent longer after having been exposed to radiation many hundreds of times as great as fallout. I am *not* going to draw the conclusion that a little radioactivity is good for us. Those animals didn't get just a little radioactivity. They got a great deal more than the natural environment provides, and there were some signs that the irradiated animals can get tumors a little more frequently than non-irradiated animals do. But tumors are not particularly dangerous for rats and mice, because their life cycles are so short that tumors don't have time to develop. Rats and mice, apparently, die from pneumonia in many instances, and there seems to be a clear statistical correlation supporting the conclusion that more radiation will bring about a situation where the rodents have less pneumonia. That is why the irradiated ones live longer. In us human beings, tumors are important, but pneumonia, fortunately, is important no longer. Physicians now know what to do about pneumonia, but they aren't nearly so successful in dealing with malignant tumors.

The experiments with radiation, thus far, have really told us nothing about either the useful or the harmful nature of a little radiation. All we know is that the effect is exceedingly small, and that maybe there is no effect at all. What effect there is may be positive or negative; we really do not know. In my opinion, it is likely that a little radiation has both helpful and harmful effects, but to strike a balance is impossible in our present state of knowledge, and may remain impossible practically forever.

RADIATION MAY ACCELERATE MUTATIONS

I must note one exception. There is one situation in which we know that penetrating radiation has an effect. There can be no doubt about it. Penetrating radiation does cause mutations. Mueller

and other geneticists have demonstrated that under certain circumstances there is strict proportionality between the size of the radiation dose and the number of mutations of a certain kind. Similar proportionality has not been demonstrated in the causation of diseases. In fact there is an abundance of evidence to indicate that this proportionality in many cases does not exist. But in the special case of mutations, there is proportionality, and it is certain that even the little radioactivity to which we are exposed will cause some mutations.

There is a proportionality—that much we know. But even this proportionality holds only under special conditions. Whenever spermatozoa, the mature male sex cells, are irradiated, one finds proportionality. But the proportionality does not hold for the eggs, in the female, nor does it hold for the spermatogonia, the cells, whose division will lead to the spermatozoa. The spermatozoa are the only cells which consist of a cell nucleus and practically nothing else. It seems that the cell nucleus contains structures which can be damaged by a single hit, and once damaged they are not repaired. This theory is reasonably plausible, and it accounts for the proportionality that I have mentioned. But in the spermatogonia and in the oozoa, there is a cell body as well as a cell nucleus. In these cells we have evidence that whatever damage is produced by penetrating radiation may be repaired. In fact, it has been found that in these cells which have bodies as well as nuclei, the same dose gives a lesser effect if it is distributed over a period of time, and a greater effect if it is concentrated at one instant. Fallout gives us a radiation which is distributed in time and which therefore is not likely to damage any other cells than the spermatozoa.

We know that natural radiation, the effects of which are greater than those produced by fallout, accounts for only a relatively small percentage of the mutations which actually occur. There are mutations which occur under the influence of some chemicals. The spontaneous mutations are remarkably temperature-sensitive, and more mutations occur at higher temperatures. When people like Pauling tell you that due to our nuclear experimentation there will be thousands of additional mutations in the coming generation, they are making a safe statement. But without mutations, the living world would not have developed adaptations to fit it to changed circumstances.

It has been shown that the overwhelming majority of mutations are harmful. The mutation is a random change in a highly organized structure. A random change is usually for the worse, rather than for the better. Nevertheless, perhaps one mutation out of a hundred, or one out of a thousand or of ten thousand, is a favorable mutation. Whatever progress is made is due to these rare constructive mutations. There is no reason to suppose that the mutations due to radiation are any

different from mutations of other kinds. If you want to say that all mutations are bad, then it follows that radiation has a harmful influence. But even if you believe—which I don't—that man is the apex of perfection, you must admit that we are living in a changing world, and that adaptation today may be as important, or more important than it has been in the past.

I think it would be wrong and foolhardy to try to interfere with the natural course of events—to increase mutations without knowing what we are doing. By radiation due to our tests, we are increasing the natural process by something like a few parts in a thousand. Some six years ago three Scandinavian geneticists reported that our habit of wearing trousers and thus raising the normal temperature of the body at certain points has increased the probability of human mutations more than 100 times as greatly as fallout does. So if you hear complaints from Pauling about the hazards of increasing mutations, believe him by all means, provided he appears before you in kilts!

THE RADIATION SCARE MAY INTERFERE WITH MEDICAL PRACTICE

This is the sum and substance of what I can tell you about the dangers of fallout, but there is an epilogue. I told you that you need not worry about the danger of fallout, but you do need to worry about the danger of the fallout *scare*. Medical people have many particular reasons to worry about it. Let us talk for a moment about diagnostic x-rays. For diagnostic purposes an average individual will be exposed to about as much radiation as he gets from natural sources—much more than he gets from fallout. This fact happens to be known to many people, and this fact, I feel quite sure, has made some of them reluctant to subject themselves to x-rays.

I might tell you a little story. In 1956 I had to be x-rayed—a gastrointestinal series—to find out my internal condition. The roentgenologist who was to subject me to this agreeable treatment wanted to make a little conversation, and it happened to be the day after Adlai Stevenson's first talk about fallout. The doctor asked me whether I had heard the speech and whether I were afraid of fallout. "Oh yes," I answered, "I am afraid of fallout. But I'm not nearly so afraid of it as I am afraid of x-rays, and I'm not nearly so afraid of x-rays as I am of what the x-rays may reveal." Fortunately, they revealed nothing.

The real danger is the fear that the talk about fallout has engendered. The x-rays are more dangerous than the fallout, and people may fear to subject themselves to these probably quite harmless x-rays. By refusing to be x-rayed, they may expose themselves to the real danger of an undiscovered disease. In the use of diagnostic x-ray, highly sensitive plates should be employed so that the patient needs be given no more than a minimum dose of radiation. Once one has made sure

that the exposure is minimal, however, one should go ahead without any further worry.

In addition to the diagnostic x-ray, we must of course consider the therapeutic x-ray. We know that if there is a malignancy that has progressed sufficiently to invade the body generally, there usually is no help other than the administration of a massive dose of x-rays. This should be done.

But as between surgery and x-ray, a remarkable double standard is being observed. If it were discovered tomorrow that I am suffering from cancer, I might be told that I had a 10 per cent chance of cure by means of surgery. Such a situation is not unusual, and like most people I would consent to that radical procedure. But if, on the other hand, it were found that my only chance were through the administration of a massive dose of radiation, I might agree only if I were absolutely guaranteed that the procedure wouldn't have immediately fatal consequences. In connection with surgery, we take a calculated risk, but in connection with radiation, we are unwilling to accept that risk.

Let me give you still another example. A few years ago, my sister had developed some thyroid difficulty. A chemical treatment had been started, but it wasn't helping her. It was clear that either the chemical treatment should be continued for a long period, or that surgery or radioactive treatment should be undertaken. The treatment with radioactive iodine is particularly easy, painless and safe. When asked, the doctor in charge said that the radioactive treatment was safe, but not completely safe.

My mother is a very conscientious and a very strongminded woman, and when the doctor's evaluation was reported to her, she simply would not consider radioactive treatment for her daughter. She had heard about fallout, and she is intelligent enough to know that the radiation to be given the thyroid is a million times stronger than fallout. I looked up some statistics and found that there is some danger from such radioactive treatment, but that it is very considerably less than the danger from chemical treatment, and also less than the danger from surgery. All of the dangers were small, but by far the smallest of them was the danger from radiation. Well, my mother fortunately considers me something of an expert in the field, and the radioactive treatment was decided upon. I am happy to report that it worked perfectly.

I wonder in how many cases the painful method of surgery is chosen simply because radiation has become a modern ghost story that frightens people without reason.

FEAR OF FALLOUT SHOULD NOT MAKE US ACCEPT A MORATORIUM ON WEAPONS TESTING

I have tried to confine myself to the strictly medical aspects of radiation. You are aware of the fact that the radiation scare has a number of other implications in our minds. Radiation is con-

nected with nuclear bombs, and because we are frightened of nuclear bombs, we are afraid of radiation. Because of all this, we have agreed to a moratorium on testing, which in my opinion seriously endangers our chances to defend ourselves. This association of ideas in all probability is the real motive power behind the radiation scare. A discussion of nuclear testing should concern the dangers of war, and it should be undertaken with complete seriousness. But I think that it is wrong and unjustified to consider radiation as a reason why further testing must not be undertaken, the more so because within the last year we have succeeded in developing increasingly "cleaner" nuclear explosives. For instance, in this last test series we have added less radioactivity to the atmosphere than in early thermonuclear test series, and this trend will continue.

CONCLUSION

I should like to emphasize that the danger of the radiation scare is a danger in the field of every

medical man. The misconceptions about radiation have led to a wrong attitude on a very widespread scale. I think that this modern ghost story has to be explained and answered. I do not believe that there is any group of people who have a greater interest in clearing up this misapprehension, or have a better chance of making the facts so clear to laymen than have medical men. Through your own efforts and through your committees, you should publish the relevant facts. It is possible and necessary for you to arrive at a firm and sane assessment of the danger—or, indeed, the lack of danger—connected with radiation. Once you have clarified this in your own minds, you should explain the situation to your patients and indeed to the general public, for all of us are your patients.

The medical profession was foremost in laying ancient superstitions to rest, and I hope it will take the initiative in ending the radiation scare and in replacing it with a proper understanding of this important subject.

Induced Abortions

There are no incidence statistics for illegal abortion in the U. S. Educated guesses place the figure at 900,000 per year. More than four in five of our clandestine abortions apparently are performed by physicians. Forty-seven per cent of maternal deaths in New York City in 1961 were charted by the Health Department to illegal abortion; most of these deaths probably arose from less than 20 per cent of abortions which were self-performed or performed by non-physicians.

The most obvious solution for the vast global abortion problem is the prevention of unwanted pregnancy.

Legal (therapeutic) abortion is being carried out with decreasing frequency in the U. S. The rate in New York City during the past two decades has been more than halved. And during the same period psychiatric indications for therapeutic abortion have risen from a position of insignificant importance to one of such relatively great importance that they now account for more than half of the therapeutic abortions done.

There is discrimination in medical authorization for abortion. In the voluntary hospitals of New York City the rate among private patients is five times the rate recorded for ward patients, and the rate on the ward service of voluntary hospitals is more than twice the rate reported by municipal

hospitals. Of 96 therapeutic abortions reported by 11 teaching hospitals in several different communities in 1959, only one was done in a Negro woman, yet 27 per cent of the obstetric clientele of these institutions was colored.

The world situation regarding legal abortion is a crazy quilt of contradictions. Legal abortion is performed on the woman's demand in Japan and in Russia and five of her satellites; why the woman demands it is not an issue. In Scandinavia, Finland, Yugoslavia, Red China and Switzerland, abortion statutes are relatively lenient compared to our own in regard to indications. Some countries have strict abortion laws but expect physicians to break them, as in Israel.

There is growing sentiment in the U. S. that our highly restrictive state laws . . . are anachronistic and puritanically punitive. . . . The legislature of California, with broad medical backing, has under consideration a more lenient act patterned after the model law framed in 1959 by the American Law Institute. . . . Would it not be helpful if a broadly based committee were appointed to investigate the problem and to render a report which included recommendations?

—Editorial by Alan F. Guttmacher, M.D., in NEW YORK STATE JOURNAL OF MEDICINE, 63:- 2334-2335, (Aug. 15) 1963

Clinicopathological Conference

CLINICAL HISTORY

THE PATIENT IS A 53-year-old white male, a salesman for a manufacturing company, who was in apparent good health until 1956, when he developed a sudden onset of light-headedness. A cardiologist whom he consulted at that time found an elevated blood count.

In 1957 he was seen again for weight loss, irritability and malaise. At that time he was treated by phlebotomy because of the markedly elevated red cell count.

He was hospitalized for two days in May, 1958, at Mercy Hospital with complaints of dizziness, lethargy and leg cramps. Physical examination revealed a slightly obese white male with a ruddy complexion. There was tenderness to palpation in the right upper quadrant. No palpable organs or masses were delineated. One thousand cubic centimeters of blood were withdrawn by phlebotomy, and a single injection of P-32 was given.

He subsequently went to the Mayo Clinic in June, 1958, for a diagnostic workup and treatment. During a two-week period while he was at the Mayo Clinic, a unit of blood was removed daily by phlebotomy during the first week, and two units of blood daily during the second week. This was followed by an injection of P-32.

He returned to the Mayo Clinic in August, 1958, for two more weeks. Daily for one week, two units of blood were withdrawn by phlebotomy. Following a one-week period of observation, another P-32 injection was given, most of which leaked from the syringe down over his arm. He relates the onset of generalized pruritis to this incident. During the remainder of 1958, and until August of last year, 500 cc. of blood were withdrawn every three months.

He was seen as an outpatient at Mercy Hospital in August, 1962, at which time he complained of lethargy, headache, malaise, generalized pruritis (especially after taking a bath) and a sudden onset of sharp pain in the left side of his abdomen.

System Review: Negative.

Past History: In 1960 he had thrombophlebitis of one leg, and shortly thereafter he had a spider bite on the right leg which resulted in his right leg's being markedly swollen, dark blue and tender for several days.

Operations: Abdominal laparotomy in 1940 for small-bowel obstruction secondary to traumatic adhesions. Right inguinal herniorrhaphy in 1943.

Physical Examination: (August, 1962) Physical examination revealed a blood pressure of 140/80 mm. Hg. The pulse was 80 per minute and regular. Respirations were 18 per minute and regular.

Skin: There was marked plethora of the face and neck. There were several telangiectasias dispersed over the cheeks and face.

Head and Neck: Negative.

Chest: The chest was symmetrical with no evidence of increased A-P diameter. The lungs were clear to auscultation and percussion. In the heart, no gross cardiomegaly was detected by palpation; the rhythm was normal sinus, and the ratio was 80 per minute. No murmurs were present.

Genitalia: Normal adult male.

Extremities: Symmetrical.

Neurologic: Physiologic.

CLINICAL COURSE

Three units of blood were withdrawn by phlebotomy. During the months of August and September, 11 units of blood were withdrawn. One unit was withdrawn on October 13, 1962, one on November 3, 1962, and another on December 1, 1962. He received 5 microcuries of P-32 on September 8, 1962, and 3 microcuries of P-32 on December 8, 1962.

Laboratory Findings: A summary of laboratory findings taken in May, 1958, and at intervals from August, 1962, to December, 1962, appears on the following page.

DISCUSSION

George H. White, M.D., Internist: In reviewing the clinical history, we have a 53-year-old white male who complained in 1956 of light-headedness and who had an elevated red blood count. In 1957 he was seen because of irritability and malaise, and was treated by phlebotomy. In 1958 his complaints were dizziness, lethargy and leg cramps. His complexion is described as "ruddy." He had tenderness to palpation in the right upper quadrant. A phlebotomy was done, and he was given an injection of P-32. In June and August, 1958, he had phlebotomies and P-32 injections. From 1958 to 1962, he had phlebotomies of 500 cc. every

LABORATORY DATA

Date	Hemoglobin	Total RBC	Total WBC	Differential	Microhematocrit	Platelets	Total Blood Volume
1958 May	22.8 Gm., 148%	8,025,000	19,000	16% lymphocytes 83% neutrophils 1% eosinophiles	75 Vol. %	315,000/cu. mm.	1,400 cc. or 120 cc./Kg.
Comment: RBC Volume: 7,850 cc., or 90 cc./Kg. Plasma Volume: 2,550 cc. or 30 cc./Kg. Urinalysis: Reaction, acid; color, straw; specific gravity, 1.014; albumin, trace; sugar, negative; RBC: 3-6/hpf.							
1962 Aug. 14	22.2 Gm., 144%	9,890,000	34,420	93% neutrophils 7% lymphocytes	81 Vol. %	Adequate platelets	
Comment: Marked neutrophilic leukocytosis, polysegmentation, hyperchromasia.							
Aug. 16	18.2 Gm., 88%				66 Vol. %		
Aug. 22	13.5 Gm., 88%	6,830,000	36,650		48 Vol. %		
Aug. 30	13.8 Gm., 90%		39,600	90% neutrophils 3% monocytes 4% lymphocytes 2% eosinophiles 1% basophiles	49 Vol. %	710,000/cu. mm.	
Sept. 15	13.7 Gm., 80%	6,720,000	36,750	76% neutrophils 19% lymphocytes 1% eosinophiles 2% basophiles	45 Vol. %		
Comment: Red blood cells show anisocytosis, leukocytosis; some hypochromia.							
Sept. 29	13.5 Gm., 88%	7,260,000	39,600	91% neutrophils 6% lymphocytes 1% eosinophiles 1% basophiles 1% monocytes	46 Vol. %		
Comment: Marked neutrophilic leukocytosis, 1 per cent nucleated red blood cells, toxic granulations, numerous platelets. Polychromasia. Red blood cells appear to have normocytic tendency.							
Oct. 22	14.8 Gm., 98%	7,800,000	39,700	83% neutrophils 1% metamonocytes 13% lymphocytes 1% eosinophiles 2% basophiles	52 Vol. %		
Nov. 17	13.0 Gm., 85%	7,460,000	40,000	89% neutrophils	48 Vol. %	Numerous	
Comment: Anisocytosis. Nucleated red cells, 2%.							
Dec. 1	14.4 Gm., 93%	7,440,000	41,000	92% neutrophils 4% metamonocytes 4% lymphocytes	51 Vol. %	Numerous	
Comment: Marked poikilocytosis, anisocytosis. Macrocytes showing polychromasia. 1 nucleated red blood cell/100. Marked neutrophilic leukocytosis.							

three months. In August, 1962, he complained of lethargy, headache, malaise, pruritis (especially after bathing), and a sudden onset of sharp pain in the left side of the abdomen. He had had thrombophlebitis of the leg in 1960.

The physical examination was non-contributory, except for marked plethora of the face and neck. The phlebotomies were continued. He received P-32 in September and December, 1962.

Laboratory studies of his blood generally indicated increased values of all the formed elements.

The symptomatology and peripheral blood picture, together with the treatment outlined, leave no doubt that the diagnosis is polycythemia vera.

The diagnosis of polycythemia is made in the presence of an increase above normal in the red blood cell count, usually with a concomitant increase in the hematocrit and the hemoglobin. About 60 to 70 per cent of the patients have increases in the white blood cell count, and many of them have an increase in platelets. Commonly there is splenomegaly.

There are many other conditions, of course, that cause an increased red blood count, and I think it would be interesting to review some of these. Erythrocythemia or erythrocytosis can be defined as an increase in the peripheral red blood cell count, hemoglobin and hematocrit. These patients do not have an increase in the white blood cell count or in the platelet count.

Another type is referred to as relative. The increase in erythrocyte count, hemoglobin and hematocrit is due to a decrease in the plasma volume, and it occurs with severe diarrhea, profuse sweating, diabetic acidosis, severe burns and persistent vomiting—conditions of hemoconcentration associated with marked loss of body fluids. The white blood cells and platelets are normal.

A large group of erythrocythemias are secondary to hypoxemia. We all recognize these when we encounter patients with congenital heart diseases associated with a partial pulmonary shunt such as intraauricular and intraventricular septal defects, pulmonary stenosis and so forth. We also recognize the condition in patients with such chronic pulmonary diseases as emphysema and fibrosis, with resulting cyanosis and polycythemia.

A similar condition occurs at high altitudes. It occurs in obesity. It occurs with abnormal hemoglobins such as methemoglobin and sulfhemoglobin. It may be associated with other diseases with no apparent hypoxemia. Some of these are renal tumors, both malignant and benign; renal diseases such as hydronephrosis, and polycystic diseases such as splenic tuberculosis, malignant tumors and multiple myeloma.

Then, there is the type of disease of unknown cause variously termed polycythemia vera, erythremia and many other things including primary polycythemia and Vaquez-Osler disease.

Since there is no problem of differential diagnosis here, I should like to discuss briefly some of the symptoms given in the protocol. The coloring of the skin is said to be unlike that of ordinary cyanosis. These people have a peculiar reddish-purple color and bloodshot eyes, thus presenting an appearance not unlike that of chronic alcoholics. The color has been described as resembling that due to blushing or exposure to heat. In other words, it is a ruddy cyanosis—not so blue as is true cyanosis. On the face it may involve the forehead, the lips, the cheeks, the tip of the nose, the ears, or the neck. When a person's erythrocyte count is quite high, his appearance is startling.

Because of a sluggish peripheral circulation, these patients are very sensitive to cold. Ecchymoses are common. A common complaint is intense pruritis made worse by bathing in hot or even warm water. This symptom disappears with treatment.

With reference to the cardiovascular system, symptoms due to vascular disease are common. These diseases include venous thrombosis, varicosities, and phlebitis as well as arterial diseases which may be so severe as to cause death. Cardiac symptoms *per se* are not so common. Gastrointestinal symptoms may be mild or severe. Patients may complain of abdominal discomfort as acute pain. In several series of cases cited by Wintrobe, up to 16 per cent of the patients developed peptic ulcers, hemorrhage or thrombosis. Boyd suggested that ulcers result from vascular thrombosis and the subsequent action of the digestive juices on an area of ischemia. There may be hemorrhage from varices in any part of the stomach or bowel. Bleeding hemorrhoids are common. Hepatomegaly occurred in 50 per cent of the Wintrobe series, and splenomegaly in 90 per cent.

The most common respiratory system symptom is dyspnea on even mild exertion. Many authors state that hoarseness is frequent. Respiratory infections are not uncommon. Massive hemoptysis and hemothorax have been observed and reported. Prominent vascular markings are seen in x-ray films of the chest.

Other organ systems are involved. Bleeding from the vagina and uterus, and bleeding from the urinary bladder have been reported. Signs of nephritis occur when hypertension exists.

Neuromuscular symptoms which Osler likened to those of mountain sickness are listed by Wintrobe. These include "lassitude, vertigo, giddiness, transitory syncope, insomnia, weakness, sensation of fullness in the head, and numbness and tingling in the fingers." Headache is repeatedly recorded as the most common neurologic symptom. Eye complaints, especially scotomata, have been reported in approximately 30 per cent of patients. Wintrobe states that neurologic manifestations are variable, but "vascular lesions of the brain con-

stitute the most serious complication." Severe pains in the extremities, he attributes to pressure from hyperplastic marrow.

The treatment of polycythemia is symptomatic, and the object is the reduction of the red cell mass by one means or another. Early in this century the most popular therapeutic agent was phenylhydrazine, which acts by destroying red blood cells. This approach defeats itself, since the products of destruction of the red blood cells remain in the body as stimuli for further production of red cells. Actually, however, phenylhydrazine fell into disuse chiefly because it was unreliable and difficult to use.

In 1916, irradiation of the marrow by x-ray was successful for the first time. Deep x-ray therapy was given to the bones, and the resultant drop in the white blood count was used as a guide to the extent of therapy. This was the only form of radiation available until radioactive phosphorus came into use.

Radioactive phosphorus is taken up more readily by rapidly dividing cells, and hence P-32 goes selectively to the metabolizing cells, notably the marrow cells. Therefore, it is uniquely suited to irradiation of the bone marrow. Its half-life of 14 days assures a continuous radiation effect for several weeks. Dr. Hines will discuss the dosage and intervals of treatment.

It is important in treatment that the bone marrow be studied repeatedly. Theoretically, polycythemia would tend to terminate naturally, either due to aplasia of the bone marrow or due to exhaustion or chronic myelocytic leukemia. P-32 also causes bone-marrow destruction. In the light of available information, it may have a tendency to produce leukemia in proportion to the amount of the irradiation.

The last method of treatment to be mentioned is venesection. This method has been applied less frequently than it might be. Venesection should be considered as a means of immediate reduction of the red cell mass.

Ralph E. Hines, M.D., Radiologist: In the treatment of polycythemia vera by means of radioactivity, there are three methods available: (1) irradiation of the long bones of the body, namely the ribs, femurs and humeri, with a sufficient dose to cause depression of the functioning bone marrow in these areas, thus causing reduction of all elements of the blood; (2) either local irradiation of the spleen or diffuse irradiation of the entire body by technics such as the so-called "spray irradiation," ones which, however, require considerable time and may produce the serious side-effects of irradiation sickness; (3) the use of radioactive isotopes—P-32—thus irradiating diseased tissue with minimal irradiation to the surrounding normal tissue.

Radioactive isotopes were first used by Lawrence in 1940. Since that time, several investiga-

tors have used it for various blood diseases. The dosage of P-32 varies with the severity of the polycythemia as well as with the weight and age of the patient. The methods of therapy vary greatly. The phosphorus may first be given in one large intravenous dose or in several small dosages, or may, on the other hand, be given orally in several small doses. Intravenously, 3 to 6 millicuries are usually given in one dose, and a remission may be expected in from 6 to 24 months from the date of administration. A single oral dose of 6 to 12 millicuries may be administered, and the patient observed over three to 10 months. Then the dosage is repeated if necessary. Another method which is becoming quite popular is the administration of approximately 2 millicuries once a month until a total dosage of 6 to 8 millicuries has been given.

All of these methods have certain advantages and disadvantages. Of course the main difficulty in giving P-32 is that of absorption and utilization. Generally speaking, an oral dose is expected to be about 25 to 50 per cent higher than an intravenous one.

Our first contact with the patient under discussion today was in May, 1958, when, as you will recall from the history, he had a very severe disease. At that time a dose of 5 millicuries of P-32 was given him intravenously, and his remission lasted until treatments were given him at the Mayo Clinic. Our next contact with him was in September, 1962, when he was found to be in another relapse. During the previous six weeks he had had repeated phlebotomies. On September 6, 1962, five millicuries of radioactive phosphorus were given him intravenously, and his course was followed by laboratory studies. The response was not remarkable, and three phlebotomies were performed in the ensuing period. Because of the persistency of his disease, it was decided to give the P-32 orally in small doses over a protracted period. These were started on December 8, 1962, with 3 millicuries given orally on that date. His next dose of radioactive phosphorus was on December 21, 1962, when 2 millicuries were given him orally. His blood counts after that administration indicated a somewhat more favorable response than previously. You know that with radioactive phosphorus treatment, one has to be quite cautious since there is no known drug that counteracts the bone marrow depression caused by radioactive phosphorus.

It should be noted that the white count in this particular patient persisted at a high level. One might expect that a patient of this type would show considerable improvement following radioactive phosphorus treatment, with relief of symptoms of headache, dyspnea, vertigo and pruritis, and we might expect the remission to last from six months to several years. However, this patient's remission appeared to be somewhat irreg-

ular as regards length, and with his present count at hand, it appears that the therapy needs to be instituted again and continued.

F. C. Coleman, M.D., Pathologist: We obtained a blood count of the patient today. The hemoglobin was 13.8 Gm.; the red blood cell count, 7,300,000/cu. mm.; and the total white blood cell count, 31,000/cu. mm.

We selected this case because it illustrates typical polycythemia vera or erythremia. The patient's illness, according to the information available to us, began in 1956, when he had the usual symptoms of light-headedness and dizziness. He consulted his doctor, and studies were made to distinguish his disease as either secondary or primary polycythemia.

Dr. White mentioned that pulmonary disease and heart disease are causes of polycythemia, but these were eliminated by the initial medical check-up. The passage of time and the performance of repeated blood studies eliminated the possibility of leukemia. As you know, a significant number of patients have been reported with a leukemoid reaction which, together with other findings, makes the differential diagnosis between chronic myelocytic leukemia and erythremia difficult. The patient was given the conventional treatment of phlebotomy. When he returned in 1958, he had a course of P-32 and a venesection with withdrawal of 1,000 cc. of blood.

Subsequently he was taken to the Mayo Clinic. It was there that an episode occurred which the patient thought had a direct bearing on the development of his pruritis. In the administration of the P-32, one of those little accidents occurred which could happen to any one of us. The syringe and the needle became separated and some of the P-32 spilled onto the patient's arm. He associated this incident with the onset of his pruritis. This became a very serious problem for him, for I think that it was primarily because of this assumed relationship that he failed to return for more treatments.

He went for four years without any treatment, although during that time he developed involvement of the veins in one of his legs. This probably was a thrombosis secondary to the polycythemia.

The patient is a sales representative, traveling about 50,000 miles each year. His guardian angel must have been peering over his shoulder, for he could have suffered from episodes of dizziness and light-headedness while driving.

The episode which really brought this patient in, however, was the development of an infarct of the spleen. While he was in western Iowa, he experienced a sudden pain in the upper left quadrant which undoubtedly was due to thrombosis with infarction of the spleen. He consulted a doctor in the town where he was visiting, and was

advised to return to Des Moines for medical attention. He accepted that advice.

We started a program of active therapy which has resulted in marked improvement in his overall health picture. He looks a great deal better. The pruritis has now lessened so that he needn't dread taking a bath. He has gained about 10 or 15 pounds. He is a little more stable emotionally than he was. He was a little tremorous in August, but now he looks fine.

Dr. Holzworth, you have seen this patient, and we should like to hear your comments about him.

Paul R. Holzworth, M.D., General Practitioner: This patient was first seen by a colleague whose practice I took over. His remissions, as Dr. Hines pointed out, have been quite irregular. We have been aware of this problem.

We have had an opportunity to examine his hemoglobin again. Actually his hemoglobin has been good—14 to 15 Gm. He has been faithful about stopping at the office when he didn't feel well. I have talked with the radiologists, and they are a little reluctant to treat someone radioactively if his hemoglobin is around 15 or 16 Gm., so we have depended on venesection. He responded well for a while. Apparently this last relapse developed rather suddenly, and he was seen by a physician who was taking my calls in my absence. This brings up a question: "How fast do relapses occur in such patients, or does anyone know?"

Dr. Coleman: I don't think anyone knows.

Dr. Holzworth: The suddenness of the patient's last relapse points up the necessity of following such cases closely and over a period of years. It is too bad that the incident of P-32 spillage occurred. I think it made our patient a little reluctant about permitting phosphorus injections, and we had to rely on the venesections at least for two or three years. Now that he is under good control, it is important to continue following him closely and not to hesitate about using radioactive phosphorus if it is necessary.

Dr. Hines: I should like to state that I have spilled radioactive phosphorus as well as other isotopes on my hands, and I never have had any itching even on the fingers involved. I am quite sure that radioactive phosphorus in itself will not cause pruritis.

Dr. Coleman: This experience, however, certainly emphasizes the necessity for good communication between the patient and the doctor who is taking care of him. As a matter of fact this disease, as much as any disease I know, requires the closest cooperation between the patient, the family doctor, the radiologist (if radioactive therapy is to be used, and usually it will be used), and the pathologist who will be studying the blood. If there is a breakdown of communication anywhere along the line, the patient will suffer because of it.

Erythremia is not cured. Rather, it is brought

under control. The patient will have the disease as long as he lives, and in order for him to live comfortably, he must have constant medical attention.

Edward J. Drew, M.D., Surgeon: Why can't this patient's blood be used for transfusions?

Dr. Coleman: The reason it can't be used for transfusions is that the American Association of Blood Banks—the national organization of blood banks—has a set of rules which members of the association must follow if they are to maintain their accreditations. One of those regulations is that no blood which has been drawn for therapeutic purposes can be used for transfusions. Now, I would quickly grant that there would be no contraindication to the use of blood from a patient with well-controlled polycythemia vera other than the AABB regulations prohibiting its use. Many venesections that are performed for therapeutic purposes are done on patients whose blood is not suitable for transfusions, however, and rather than attempt to select those patients whose blood is suitable and to reject those whose blood is not, it was decided that no blood drawn for therapeutic purposes should be so used. We want our blood bank here to remain accredited in order to assure the patients, the medical profession, and the public that we have a good bank. Thus we must obey AABB regulations and maintain the standards it requires. Personally I should have no hesitation in accepting a transfusion from this patient if a venesection were necessary for his management and I needed a blood transfusion.

Jose Prieto, M.D., Pathology Resident: Why is the bleeding tendency so common in cases of polycythemia? It is common, is it not?

Dr. Coleman: The bleeding tendency is common in polycythemia, and there are several explanations offered for it. It may involve the skin or any of the viscera, either abdominal or thoracic, or it may be cerebral. One of the causes given is vascular stasis with anoxemia. Anoxemia and sluggish flow may result in a weakening of the walls of the blood vessels, with the possibility of rupture of the blood vessels and subsequent hemorrhage. Another explanation is the increase in blood volume, which brings about increased pressure on the walls of the blood vessels. Also it has been said—and I believe correctly, although the mechanism is not clearly understood—that there is an interference with the blood clotting mechanism in patients with polycythemia, and in the face of any injury to the blood vessels, though actually quite minor, clotting fails to take place as it should.

Thomas D. Ghrist, M.D., Internist: I have had the opportunity to see cases of this type at Ohio State University, and I certainly agree with Dr. Coleman's statement that the course of the disease is characterized by irregularity. Irregularity is the rule. That is why the patient must be kept

under constant care. Some patients require P-32 only at infrequent intervals; others require treatment every month.

The third method of treatment of which Dr. Hines spoke and the one we have found to be most satisfactory is to give small doses of P-32 at frequent intervals. Two millicuries, perhaps, every six weeks or every two or three months, will keep the red cell count and the hematocrit controlled more efficiently. We have come to accept pruritis as one of the common occurrences. This is seen in almost all patients at some time or another. Very few patients failed to have it, regardless of the kind of therapy they were given.

The relationship of P-32 in the potentiation of any leukemic process or change was a cause of concern because of Damasheck's remark that P-32 caused a higher incidence of reversion of polycythemia vera to the other myeloproliferative states—in other words, to chronic myeloid leukemia and myelofibrosis. We were interested in a possible relationship, so we compared cases treated with P-32 with cases that had been treated before P-32 was introduced. There was no difference in the incidences of reversion of polycythemia into a malignant condition.

It is of interest also that in recent years "erythropoietin" has been investigated in almost all anemias or conditions of increased blood production. We sent blood from polycythemics, both in remission and in relapse, to Dr. Jacobsen, who was then doing assays in Chicago. The results indicated then—and I think this has been confirmed by more recent work—that there is no increase in the assayable erythropoietin in the blood of patients with the polycythemias. Apparently erythropoietin is present in the blood of certain anemias, but not in polycythemics.

Dr. Coleman: I should like to make one or two additional comments occasioned by Dr. Ghrist's remarks. The erythropoietin to which he referred, or the erythropoietic stimulating factor, is a substance which is formed in the kidney in response to anoxia and in the presence of low oxygen tension. An increased amount of erythropoietin is formed, and it then stimulates the primitive cells in the bone marrow to release red cells into the peripheral circulation. It is not surprising that erythropoietin is not increased in polycythemia vera, however, because the oxygen tension is normal when the polycythemia is of the primary type, as in the patient whom we have been describing. If the polycythemia were secondary to heart disease or to lung disease, then the oxygen tension would be reduced and there would be an increase in the erythropoietin level.

Dr. Denser asked a question about iron metabolism. Just one quick comment on that. There is excessive iron turnover in an untreated polycythemia vera patient. Increased utilization of iron,

again, would be expected because of the increased activity of the bone marrow. The exact stimulus which causes this increased production of the red cells in polycythemia vera or erythremia is not understood, but the bone marrow is quite capable of turning out cells at a fabulous rate, at least sporadically.

Are there any questions you would like to ask of the speakers.

Ronald F. Maly, M.D., Intern: Is there any change in the serum proteins?

Dr. Coleman: So far as is known, there is no significant alteration in the serum proteins in polycythemia vera.

Coming Meetings

IN STATE

- Sept. 14-15 **Radiology.** SUI College of Medicine, Iowa City
- Sept. 16-17 **Annual Scientific Meeting.** Iowa Chapter of the American Academy of General Practice, Hotel Savery, Des Moines
- Sept. 18-19 **Pediatrics.** SUI College of Medicine, Iowa City
- Oct. 4-5 **6th Annual Rehabilitation Seminar for Physical Therapists.** S.U.I. College of Medicine, Iowa City.
- Oct. 11 **Current Problems in Diagnostic and Therapeutic Urology.** S.U.I. College of Medicine, Iowa City.
- Oct. 18 **Arthritis and Related Disorders.** S.U.I. College of Medicine, Iowa City.

CONTINENTAL U. S.

- Sept. 5-9 **College of American Pathologists,** Palmer House, Chicago.
- Sept. 9-13 **Basic Mechanisms in Internal Medicine (American College of Physicians).** University of California School of Medicine, San Francisco, California.
- Sept. 10-13 **Utah State Medical Association,** Salt Lake City.
- Sept. 11-14 **Colorado Medical Society,** Pueblo College, Pueblo.
- Sept. 12-14 **Central Association of Obstetricians and Gynecologists,** Denver Hilton Hotel, Denver.
- Sept. 16-20 **Pulmonary Disease Seminar (University of Colorado Medical Center).** Fitzsimons General Hospital, Denver, Colorado.
- Sept. 16-28 **Laryngology and Bronchoesophagology (University of Illinois College of Medicine, Department of Otolaryngology).** Chicago, Illinois.
- Sept. 19-21 **American College of Obstetricians and Gynecologists (District 7),** Sheraton Oklahoma Hotel, Oklahoma City.
- Sept. 20 **Infectious Diseases,** University of Kansas Medical Center, Kansas City, Kansas.
- Sept. 20-21 **Sixteenth National Rural Health Conference.** Arlington Hotel, Hot Springs, Arkansas.
- Sept. 22-26 **Western Orthopedic Association,** Seattle.
- Sept. 22-27 **Michigan State Medical Society,** Pantlind Hotel, Grand Rapids.
- Sept. 24-26 **Kentucky State Medical Association,** Phoenix Hotel, Lexington.
- Sept. 25-26 **23rd National Congress on Occupational Health (AMA Council on Occupational Health).** Jack Far Hotel, San Francisco, California.
- Sept. 26-28 **Immediate Care of the Sick and Injured,** University of Kansas Medical Center, Kansas City, Kansas.
- Sept. 27-Oct. 5 **American Society of Clinical Pathologists,** Palmer House, Chicago.
- Sept. 30-Oct. 2 **Kansas City Southwest Clinical Society's 41st Annual Fall Clinical Conference.** Hotel Muehlebach, Kansas City, Missouri.
- Oct. 3-4 **The Eye of Physical Diagnosis,** University of Kansas Medical Center, Kansas City, Kansas.
- Oct. 5-10 **American Academy of Pediatrics,** Palmer House, Chicago.
- Oct. 5-11 **Annual Otolaryngologic Assembly (University of Illinois College of Medicine and the Illinois Eye and Ear Infirmary),** Chicago.
- Oct. 7-9 **American Electroencephalographic Society,** Jack Tar Hotel, San Francisco.
- Oct. 7-11 **Recent Advances in Basic Mechanisms in Internal Medicine,** University of Michigan Medical Center, Ann Arbor.
- Oct. 8-12 **Congress of Neurological Surgeons,** Denver-Hilton Hotel, Denver.
- Oct. 10-12 **Ninth National Conference on Physicians and Schools,** Conrad Hilton Hotel, Chicago.
- Oct. 10-13 **American Society of Clinical Hypnosis,** Jack Tar Hotel, San Francisco.
- Oct. 10-13 **American Society of Maxillofacial Surgeons,** Sheraton-Park Hotel, Washington, D. C.
- Oct. 12-13 **Mid-West Allergy Forum,** Sheraton-Cleveland Hotel, Cleveland.
- Oct. 13-18 **International Congress of Plastic Surgery,** Sheraton-Park Hotel, Washington, D. C.
- Oct. 14-18 **Recent Advances in the Diagnosis and Treatment of Disease of the Heart and Lungs,** International Inn, Washington, D. C.
- Oct. 15-17 **Indiana State Medical Association,** Murat Temple, Indianapolis.
- Oct. 17-19 **Central Neuropsychiatric Association,** Sheraton-Lincoln Hotel, Houston.
- Oct. 17-20 **Academy of Psychosomatic Medicine,** Sheraton-Palace Hotel, San Francisco.
- Oct. 19-23 **National Medical Foundation for Eye Care,** New York City.
- Oct. 20-25 **American Academy of Ophthalmology and Otolaryngology,** New York Hilton Hotel, New York City.
- Oct. 21-22 **American Cancer Society,** Biltmore Hotel, New York City.
- Oct. 21-24 **Interstate Postgraduate Medical Association of North America,** Palmer House, Chicago.
- Oct. 21-25 **Common Problems in Endocrinology and Metabolism: Basic Concepts and Clinical Application,** Marquette University School of Medicine, Milwaukee.
- Oct. 21-25 **Clinical Cardiopulmonary Physiology,** Pick Congress Hotel, Chicago.
- Oct. 22-24 **Fractures in General Practice,** Medical College of Georgia, Augusta.
- Oct. 22-26 **Society for Clinical and Experimental Hypnosis,** Barbizon Plaza Hotel, New York City.
- Oct. 23-25 **Chiefs-of-Staff Conference,** University of Colorado Medical Center, Denver.
- Oct. 24-26 **American Association for the Surgery of Trauma,** Mark Hopkins Hotel, San Francisco.
- Oct. 24-26 **American College of Obstetricians and Gynecologists (District 5),** Detroit Statler Hotel, Detroit.
- Oct. 25-26 **National Congress on Medical Quackery,** Sheraton-Park Hotel, Washington, D. C.
- Oct. 25-29 **American Heart Association,** Biltmore Hotel, Los Angeles.
- Oct. 28-31 **31st Annual Assembly of the Omaha Mid-West Clinical Society,** Civic Auditorium, Omaha.
- Oct. 28-Nov. 1 **American College of Surgeons,** Fairmont and Mark Hopkins Hotel, San Francisco.
- Oct. 28-Nov. 1 **Allergy and Hypersensitivity States,** Northwestern University Medical School, Chicago.

ABROAD

- Sept. 1-7 **International Congress on Orthopaedic Surgery and Traumatology.** Vienna. Write: Karl Chiari, Grillparzerstrasse 14, Vienna 1
- Sept. 2-6 **International Congress on Clinical Pathology.** Mexico City. Write: E. Cervera B., M.D., Asociacion Mexicana de Laboratorio Clinico, Durango 213, Mexico 7, D.F.
- Sept. 2-10 **International Congress of Genetics.** The Hague, Netherlands. Write: S. J. Geerts, 14 de Monchyplein, The Hague
- Sept. 9-13 **Conference on Cellular Control Mechanisms and Cancer.** Amsterdam. Write: O. Mühlbock, Netherlands Cancer Institute, Antoni van Leeuwenhoek-Huis, Sarphatistraat 108, Amsterdam C
- Sept. 12-14 **Anesthesia Conference.** Freiburg im Breisgau, W. Germany. Info: K. Wieners, M.D., Anästhesieabteilung and der Chirurgischen Universitätsklinik, Freiburg im Breisgau.
- Sept. 15-21 **International Congress on Occupational Health.** Madrid. Write: D. P. Sangro Torres, M.D., Instituto Nacional de Medicina y Seguridad del Trabajo, Ciudad Universitaria, Madrid
- Sept. 16-20 **Ciba Foundation Guest Symposium on Mother-Infant Interaction.** London. Write: Ciba Foundation, 41 Portland Place, London W1
- Sept. 16-22 **Ninth Congress on Vital Substances, Nutrition and Diseases of Civilization.** Lindau and Gengen, Germany. Write: Bemeroderstrasse 61, Hanover-Kirchrode, Germany
- Sept. 19-21 **Congress of the International Society of Cardiovascular Surgery.** Rome, Italy. Write: H. Haimovici, M.D., 862 Park Avenue, New York 21
- Sept. 19-22 **Fifth International Congress of General Practice.** Salzburg, Germany. Write: K. Engelmeier, M.D., Internationale Gesellschaft für Praktisch Angewandte Medizin, Langestrasse 21, Oelde, Westf. West Germany
- Sept. 22-28 **Seventeenth World Medical Assembly.** Mexico City. Write: Harry S. Gear, M.D., 10 Columbus Circle, New York 19
- Sept. 23-27 **World Federation of Neurology.** Strasbourg, France. Write: H. Fishgold, M.D., Institut Bunge, 59 rue Philippe Williot, Berchem-Antwerp, Belgium
- Sept. 23-Nov. 22 **Around the World Postgraduate Surgical Clinic Tour (International College of Surgeons).** For complete information contact the International Travel Service, Inc., 116 South Wabash Avenue, Chicago 3, Illinois
- Sept. 24-28 **Seventeenth International Tuberculosis Conference.** Rome. Write: Sec.-Gen. G. l'Ettore, via Ezio 24, Rome
- Sept. 26-28 **International Congress of Therapy.** Brussels. Write: Dr. Bauduin, Faculté de Médecine, 115 boul de Waterloo, Brussels
- Oct. 6-11 **International Congress of Clinical Pathology.** Mexico City. Write: E. Cervera, M.D., Durango 213, Mexico 7, D.F.
- Oct. 13-18 **American Society of Plastic and Reconstruction Surgery.** Sheraton Hotel, Washington, D. C.
- Nov. 5-13 **Ninth Congress of the Pan-Pacific Surgical Association.** Honolulu. Write: F. J. Pinkerton, M.D., Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13, Hawaii
- Nov. 13-Dec. 10 **First Pan-Pacific Mobile Educational Lecture Seminar.** New Zealand, Australia, Thailand, the Philippines, Hong Kong and Japan. Write Dr. F. J. Pinkerton, Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13

Radiology

A postgraduate course in radiology will be held in Iowa City, September 14 and 15.

The Saturday program will consist of a business meeting of the Iowa Radiological Society, commencing at 3:00 p.m., followed by cocktails and a dinner.

The program for Sunday, September 15 will be conducted in the Cardioscope Room (E 328-1) of University Hospitals, and the principal presentations will be the following:

- 10:05 a.m. "Highlights in the History of Radiology"—C. L. Gillies, M.D.
- 10:30 "Radiographic Manifestations of Rheumatoid Diseases"—E. F. VanEpps, M.D.
"The Effects of Mecholyl on the Lower Esophagus"—F. D. Lawson, M.D.
- 11:00 "Experience to Date With Mammography at S.U.I."—A. F. Schroeder, M.D.
"Flow Rates Through Angiographic Catheters, and Features of Pressure Injectors"—G. J. Roller, M.D.
"Placement of Radioactive Materials in Lymph Nodes"—H. W. Fischer, M.D.

"Radiographic Features of Multiple Myeloma"—R. E. Bethards, M.D.

"Percutaneous Cholangiography"—R. E. Lewis, M.D.

1:00 p.m. "Current Status of Chemotherapy in Cancer of the Breast"—R. L. Lawton, M.D.

a. Follow-up of Results of Combined Therapy in Cancer of the Lung

b. Combined Chemotherapy and Radiation in Tumor Treatment—H. W. Wiggins, M.D.

"Radiation Therapy of Ewing's Sarcoma"—E. Newman, M.D.

"Cysts of the Mandible and Maxilla"—J. C. Spellmeyer, M.D.

2:00 "Intraosseous Venography"—C. W. Graham, M.D.

"Presentation of Two Unusual Cases"—E. Hirschbiel, M.D.

"Non-Routine Cholecystography"—G. M. Wyatt, M.D.

"Some Applications of Cinefluorography"—J. T. Keller, M.D.



INTUSSUSCEPTION

An analysis of 300 cases of intussusception by Benson and his associates,* in Detroit, is an illuminating study which is of interest to the clinician and the surgeon. The opportunity to observe such a large group of cases is denied to most physicians, and the lessons learned by those who have been so privileged are invaluable.

According to Benson, intussusception is the most common cause of intestinal obstruction between the ages of two months and five years. Though it may occur at any age, its highest incidence lies between the third and the eleventh months of life. In the group of 300 cases analyzed, 79 per cent of the patients were under two years of age, and 96 per cent were under five years.

The etiology of intussusception continues to be obscure, and 85 to 90 per cent of all reported cases are classified as idiopathic. A small group, varying from 5 to 15 per cent, are attributed to some demonstrable local cause. In the Detroit series, 9 per cent of the cases were attributed to local causes, or had occurred as a complication of disease or as a consequence of surgery. A Meckel's diverticulum was present in 14 patients. Marked lymphoid hyperplasia, bulging into the lumen of the bowel in a polypoid manner, was the apparent cause of intussusception in three patients; polyps were present in four; lymphosarcoma in two; and duplication of the cecum had produced ileocolic intussusception in a two-day-old infant. There were two children in whom the intestinal lesions of Henoch-Schönlein purpura had resulted in intussusception, and intussusception of the jejunum had occurred on the fourth day in a patient following an operation for the correction of coarctation of the aorta.

Several hypotheses have been advanced alleging a common etiologic factor in idiopathic intussusception, but no one common factor has been demonstrated. In some of the cases in the Detroit series, an antecedent enteritis appeared to have played a significant role. The combination of hyperperistalsis and hypertrophy of Peyer's patches in the terminal ileum had appeared to contribute to the development of intussusception.

In the group of 300 patients, 214 were white, 85

were Negro and one was Oriental. Their ages ranged from two days to 14 years. Males outnumbered females almost two to one, a ratio which conforms to those reported by others.

The Detroit group employ the barium enema chiefly as a diagnostic aid, rather than as a therapeutic tool. As a consequence, there were only 25 patients in whom hydrostatic reduction of the intussusception was accomplished. The lesions in 24 of these were ileocolic, and in one it was a colocolic intussusception secondary to a polyp of the transverse colon. Despite the popularity of hydrostatic reduction of intussusception with the barium enema in certain centers, operative reduction is the treatment of choice, according to Benson, although he and his associates acknowledge that the barium enema is an effective method of treatment in experienced hands and that it is probably a safe method if adequate precautions are followed. Close cooperation between the radiologist and the surgeon is a requisite if this method of reduction is attempted. Stress is placed upon the hazard of employing hydrostatic reduction as an outpatient procedure, and it is emphasized that all patients so treated should be hospitalized and observed carefully for at least 48 hours.

The criteria by which the successful hydrostatic reduction of an ileocolic intussusception is determined are: (1) adequate filling of the cecum with reflux into the terminal ileum; (2) the absence of a filling defect in the cecum; (3) the relief of symptoms in the patient; (4) the absence of small-bowel obstruction; and (5) no evidence of recurrence in the post-evacuation films.

In patients who are critically ill, in whom there is evidence of peritoneal irritation or in whom clinical and roentgenologic evidence of small bowel obstruction is present, a barium enema should be used only as a simple diagnostic procedure. Under any of these conditions the loss of valuable time, the possibility of perforation of gangrenous bowel and the possibility of overlooking an ileocecal intussusception are hazards to be considered carefully.

Preoperative evaluation is of great importance in the management of these patients. Although the duration of symptoms ordinarily is of great significance, the authors point out that gangrenous bowel had to be removed in certain patients whose symptoms were of no more than 12 hours' duration, and that in some infants chronic intussusceptions of six or more days' duration were reduced without difficulty.

Because of the trouble in predicting which intussusceptions will be irreducible and in which patients resection of gangrenous bowel will be necessary, it is the practice of the Detroit group to be prepared for whatever surgery may be required. All patients receive intravenous therapy, and matched blood is available. A cutdown infusion is used in infants, in very ill patients and in any patient in whom a reliable infusion cannot be maintained.

* Benson, C. D., Lloyd, J. R., and Fischer, H.: Intussusception in infants and children; analysis of 300 cases. *ARCH. SURG.*, 86:745-751, (May), 1963.

Moderate degrees of dehydration can usually be corrected in a few hours by intravenous infusion, and fever is frequently lowered by the hydration. In the more critically ill patients, particularly those with evidence of shock or of peritonitis, careful preoperative preparation is necessary. In the judgment of the authors, the poor-risk patient is frequently the inadequately-prepared patient. It is important that dehydration be corrected, that high temperature elevation be reduced to less than 101°F., that circulating blood volume be restored, and in the presence of severe oliguria that an adequate urinary output be established. Adequate intravenous fluid, proper electrolyte and colloid therapy, nasogastric decompression, and antibiotics frequently convert the critically ill patient into a reasonably good surgical risk.

From their experience, Benson *et al.* feel that in general there is no necessity for exteriorization procedures if gangrene of the bowel is encountered. In the properly prepared patient, the time an experienced surgeon needs to perform a resection and a primary end-to-end anastomosis does not constitute a greater risk than the technical difficulties encountered in exteriorizing the bowel. When resection is necessary, decompression of the distended proximal bowel is extremely important in that it facilitates primary anastomosis and reduces the hazard of contamination.

Incidental appendectomy was done in 184 of the 237 patients who underwent surgical reduction of an intussusception, but this additional procedure did not contribute to the morbidity or mortality. Many of the children, particularly those who are critically ill, require continued supportive therapy with fluids, electrolytes, colloids and antibiotics during the postoperative period.

Intestinal resection was required in 38 patients (16 per cent), irreducible intussusception or gangrenous bowel necessitated resection in 29 cases, and a local cause required resection in 20 patients. The disparity in numbers is due to the fact that some patients had demonstrable local lesions in association with gangrenous bowel.

Recurrence of intussusception occurred in one patient 48 hours after reduction by hydrostatic pressure. Among 237 patients who were subjected to exploratory laparotomy, nine had recurrences from two days to two years after reduction. There were no deaths in the group of 25 patients in whom reduction was accomplished by barium enema. In 237 patients who underwent surgical reduction there were four deaths, or a mortality of 1.7 per cent. In the group of 38 patients in whom resection and primary anastomosis were done, there were three deaths, or a mortality of 7.8 per cent. The over-all mortality in the group of 300 patients was 2.3 per cent. Six of the seven patients who died were under one year of age. Shock, with an associated peritonitis, was the primary cause of death.

As a result of their experience, the Detroit sur-

geons emphasize the importance of adequate preoperative preparation, and of individualizing patient evaluations. Resection of gangrenous or irreducible bowel and primary anastomosis are the procedures of choice. Any segment of intestine in which the viability is not absolutely certain should be resected. The clinician must be alert to the fact that rectal bleeding occurs in only about one third of the patients with intussusception, and that especially in ileoileal intussusception, it frequently is not present. If properly performed and if all necessary precautions are taken, reduction by barium enema may be successful in intussusceptions of short duration, but such patients must be kept in the hospital under careful observation for at least 48 hours.

FASTING AS THERAPY FOR OBESITY

Nationwide publicity has been given to a female patient in a California hospital who reduced her weight from 315 to 184 lbs. within a period of six months. Her therapy included 117 days of fasting, during which time she ingested only water and a vitamin tablet daily. Unquestionably, many physicians will be interrogated concerning the safety and the efficacy of such a regimen. An article by a group of physicians from the Division of Medicine at the Pennsylvania Hospital, Philadelphia, reports on the management of 107 patients by the use of intermittent fasts in the correction and the control of intractable obesity.*

According to the Philadelphia group, obesity is a major clinical and public health problem. In this country, more than one in 20 males and one in nine females 20 years of age or older are 20 per cent or more above average weight. Sustained hypertension has been found much more frequently in people who are overweight than in those who are thin or of medium weight. Other studies have shown that those who are appreciably overweight had twice as many new cases of arteriosclerotic heart disease as did those who were under average weight. Obesity is a common antecedent to diabetes, and among diabetic patients the mortality is much higher in those who are overweight than in those of average weight.

Previous reports of short periods of fasting as the initial phase of treatment for obesity demonstrated that this method was well tolerated and was efficacious. On the basis of these findings, the Philadelphia group instituted fasts of one to 15 days' duration as a means of reducing obese diabetic and non-diabetic patients. Following the initial period of fast, one- and two-day fasts were carried out at varying intervals to further a continuation of weight reduction and to prevent the regaining of lost weight.

* Duncan, G. G., Jensen, W. K., Cristoferi, F. C., and Schless, G. L.: Intermittent fasts in correction and control of intractable obesity. *AM. J. MED. SCI.*, 245:515-520, (May) 1963.

Editorials continued...

The 107 individuals in the study were ones who had been unable to reduce by the conventional measures of low-calorie diet, anorexic drugs, exercise and psychiatric guidance. Each patient was hospitalized for study and for the initial period of fasting. Excluded were pregnant patients and those with infections, hepatic disease, peptic ulcers, recent myocardial infarction, or labile, poorly controlled diabetes.

Before institution of the fast, a glucose tolerance test was done on each patient. Because of the high incidence of gallbladder disease, cholecystograms were done routinely. Repeated determinations of blood sugar, serum and urine ketone determinations, CO_2 combining power, electrolytes and lipids were made. Steroid and sodium chloride excretions were also determined.

The 107 obese subjects were either private patients or those treated in public wards. Water was allowed as desired, as well as weak tea or coffee and flavored beverages of no calorie value. A multiple-vitamin capsule was given once or twice daily to prevent vitamin deficiency during the period of starvation. Patients under 18 years of age were restricted to fasts of fewer than seven days, and in most instances they were limited to four or five days. For patients over 18, the fasts varied from five to 14 days. The patients resumed food intake one day before discharge from the hospital, usually as a diet of 1,500 to 2,300 calories. A one-day fast per week thereafter was recommended as a means of achieving more weight loss. During all fasting periods, physical activity was restricted to a minimum, for patients experienced weakness when they did not observe this rule.

Ketonuria was present on the first or second day of the fast, and hyperketonemia could be detected on the second day and gradually increased as the fast continued. The total serum lipids remained within normal limits. No significant changes in the serum cholesterol were observed. The CO_2 combining power, the serum electrolytes, fibrinolytic activities and steroid excretions were not altered during the period of fast. Hyponatremia was not observed, though NaCl excretion was increased during the early days of the fast.

During the period of fasting, weakness was not an uncommon complaint, but it was not necessary for any patient to discontinue the fast for this reason. A few patients complained of light-headedness and weakness, and mild waves of nausea were experienced by about one-third of the patients.

In follow-up studies of the 107 patients after periods varying from one to 32 months, it was found that 43 per cent had maintained the initial reduction in weight, 17 per cent had continued to reduce, and 40 per cent had regained their former weights. During the period of fasting, the loss in weight varied from 1.5 to 4 lbs. per day, and the

average loss was between 2 and 2.5 lbs. per day. Most of the patients had a sense of well being and were surprisingly cheerful. There were few complaints of hunger, and anorexia was striking after the first day of the fast, and there was a close relationship between hyperketonemia and loss of appetite in every patient in the series. In those patients with essential hypertension, the blood pressure returned to normal, but all cases of hypertension were mild. In three patients with resistant psoriasis, the condition improved during the period of weight reduction.

The authors conclude that total fasts of four to 14 days' duration are an effective means of weight reduction. Subsequent fasts of one or two days' duration, at varying intervals, caused further weight reduction and permitted patients a somewhat more liberal diet in the meantime. Because of the anorexic effect of fasting, total fast appears to be tolerated better than a prolonged low-calorie diet. The anorexia which accompanies abstinence from food is thought to be due to the hyperketonemia induced by the fast.

AN AGING MAN'S PRAYER

As the years hasten and add up, and as the shadows lengthen, there is a tendency for one's idiosyncrasies to become exaggerated, for his world to become circumscribed, and for him to become hypercritical of others, to be embittered by his multiplying infirmities, and to grow either unduly loquacious or to withdraw into a shell of silence. Thus each of us should append to his BIBLE the following prayer from the column by Dr. Walter Alvarez which appeared in the DES MOINES TRIBUNE for July 25:

Dear Lord, I realize that I am growing old. Help me to keep from getting too talkative—from getting boresome—and from getting positive and vehement about many subjects about which I know little. May I keep remembering that simply because I know one subject well, this does not mean that I am equally an expert on other subjects.

Help me to watch the faces of those about me so that I will know when I have said enough. Help me to keep from developing the monologue habit. Teach me to listen as well as to speak. Help me to get quickly to the point of my story and then to quit. Help me to avoid giving a biography of all the persons whom I mention. Help me to avoid giving minute details about everything.

Help me to realize that if I am to have young friends, or even old friends, I must not drive them away by long recitals of my discomforts and hardships and the injustices that have been done to me. May I never speak of the ingratitude of my children; may I never describe my backache—except to my physician.

Help me to see that, if I am to keep my old friends and find new ones, I must be friendly, and I must make it worthwhile for people to come and

see me and chat with me. As we visit, I must give them some pleasure and some mental stimulus, or they will not come back. Help me to have a real interest in my guests, sympathy for them, and concern over their problems. Teach me to listen patiently to their tales of woe. Help me to keep up some correspondence with my relatives and my friends.

Help me to keep from getting the idea that I can—and must—direct the lives of those about me. Help me to mind my own affairs and not to tell other people what to do. Help me to keep from being bossy. Help me to see that I will be lucky if I take care of my own life wisely.

Above all things, oh Lord, help me to remain kindly; keep me from becoming bitter; keep me from going into tirades about the President or some of his actions that I dislike. Help me to avoid exploding in wrath over little annoyances.

Help me to keep from becoming miserly and parsimonious in matters of money.

Help me, dear Lord, to keep what redeeming sense of humor and self-criticism I may once have had.

Help me to make allowances for the weaknesses and irritabilities of some persons I may meet; goodness knows, they will have to make allowances for the defects and irritabilities they will find in me. Amen.

TRIBUTES MOST TO BE DESIRED

The obituary column of the *BRITISH MEDICAL JOURNAL* for May 29 contained comments by several physicians concerning Dr. L. M. Rouillard, who had recently died at the untimely age of 51 years. Dr. Rouillard had been a plastic surgeon and a consultant to the United Norwich Hospitals and the United Cambridge Hospitals. Seldom is one privileged to read such generous praise of a man, and even a posthumous acquaintance with this unusual personality is an enriching experience.

Excerpts from the obituary and from the accompanying letters give one an insight into this man's character:

"It was his charming personality which endeared him to his many friends. He had a keen sense of humor and of fun which delighted all who came in contact with him. A good pianist, and a lover of all things musical, he had a curious habit of humming a little tune if anyone said anything foreign to his nature. Though not especially a religious man, there was no evil in him and he could not be part of anything underhand or dishonest. . . . He was a sportsman who played for sheer fun. . . . A fitting memorial to this kind and gentle surgeon is the knowledge that his acts of kindness, the innumerable benefits he bestowed on his patients, and the memory of a charming personality will live for many years to come. And of him it could be truly said, 'The goodness that men do lives after them.'"

"Louis Rouillard was the best of colleagues—tolerant, conscientious, and a very skilled surgeon. . . . He was always willing to help in any difficult procedure, or advise in a delightfully modest and diffident way. He dealt with a constant procession of the burnt, maimed, and disfigured, and it was always an enriching experience to accompany him to his ward and see there his humane and unaffected relations with his patients. Genial companion and versatile sportsman, he had innumerable friends in all walks of life, and his *unobtrusive* goodness and ability won him a host of grateful patients. They all mourn his loss."

"In his quiet reminiscent way he initiated me into a whole host of humorous stories—all utterly true and sparked with divine wit. He was shy but not retiring, and a man of wisdom and complete integrity. Though he would be the last to admit it, he was a person who showed in all of its best aspects the greatest of all virtues, *humility*."

There is a temptation for the physician to lose something of his humility, to dramatize his position and to acquire a feeling of self-importance, for he deals with life and with death. The realistic doctor is humbled by the miracle of birth, by the delicate physical and chemical forces which maintain life, by the mystery of death, by the weight of his own responsibilities, and by the consciousness of his own professional limitations. The physician can be justifiably proud of his profession and of his competence, but he should never indulge himself in arrogance or in smug superiority. Confronted by the ills to which flesh is heir, the physician of experience can have no illusions concerning his individual importance.

As we are told they did in Dr. Rouillard, the uncommon qualities of *unobtrusive* goodness and *humility* prompt the admiration and respect and the affection of all men!

AN EXTREMELY SIMPLE TEST

A current advertisement for Bromsulphalein contains a quotation from a medical article about the liver function test based on the injection of the dye and ends in this provocative phrase, "and is an extremely simple test to perform." The author was not even content to refer to the test as simple, but felt obligated to heap insult on injury and qualify the word "simple" by "extremely."

To one who has had a vast experience with laboratory procedures, no procedure or test is *simple*, much less *extremely simple*. To the uninitiated or to the physician who does laboratory tests by proxy, by administration, or "on order," most tests are simple—for him. But to the laboratorian, who day by day and year in and year out works with his own hands and closely supervises those of his technicians, the pitfalls in a so-called bedside or simple test are frequent and deep. Bright's test for urinary albumin, which was performed at the bedside in a silver spoon over a

Editorials continued...

spirit lamp more than a century ago, was extremely simple—and inaccurate.

Perhaps calling a test "simple" is a matter of viewpoint or a difference in the mental concept of a test. To the experienced and finely trained laboratory physician, a test begins with its concept and continues on through its long development, its numerous modifications, the preparation of its reagents, its technical performance, the observation of its numerous technical errors, its transmittal errors, and finally its interpretation in the light of the patient's condition. Of these factors, the technical performance, usually considered the test, is least important, although it is important enough to demand meticulous care and thorough understanding.

Now the Bromsulphalein test is *not* a simple one—far from it. I began my use of the test at the Mayo Clinic in 1933 after Dr. Carl Green had worked with the test for several years. In all, I performed with my own hands or closely supervised the performance of something in excess of 200,000 of these tests, not including thousands performed on animals. The only death immediately following a laboratory test I ever saw in more than 40 years of medical practice occurred after one of these tests. Other writers have reported such deaths, and I and others have seen edema of the throat and lungs, dyspnea, urticaria, angioneurotic edema, severe asthma, and electrocardiographic changes following the injection of the dye. To be sure, these complications are rare, but they do occur. No test that can produce such a display of complications can, by the wildest stretch of the imagination, be called "extremely simple."

But these are not all of the complications in performing the test. I have seen a Grade 4 retention reported because the hub of a needle was not properly washed, a condition not easy to detect. Dye retentions and no dye retentions have been reported because the test was so simple (*sic!*) no one thought that partially thrombosed veins in the arm would cause a false result. I have struggled many times to read a result when the serum was only slightly hemolyzed. Poor venipunctures can cause erroneous readings, and persons with ascites always present a problem in estimating the dose of the dye to be administered. The standards are critical and begin to fade shortly after manufacture; they must be constantly checked by means that are not simple.

A venipuncture in many persons who need this test is frequently difficult because such persons are likely to be very ill and have had all kinds of tests and intravenous therapy. In few other tests are the requirements for a clean venipuncture so necessary as in this one. If the serum is cloudy, owing to the ingestion of food or other cause of lipemia, the test is extremely difficult to read,

and clearing such serum is by no means simple or easy. Sometimes it just can't be done.

In short, if one has only a superficial knowledge of the test and thinks of it as merely adding a drop of 10 per cent sodium hydroxide (I hope the technician has not used 1/10 N instead of 10 per cent) to serum and looking at a brilliant purple color against a water-clear solution of dye in standards someone else has kindly prepared, the test is simple, extremely simple. Unfortunately or fortunately, according to your viewpoint, this is not all there is to the test, which fact accounts for numerous errors and failures in its performance.

The same may be said of all other laboratory tests. This is particularly true of the numerous so-called automatic or semiautomatic tests. In a well appointed laboratory, with skilled and highly paid bacteriologists, chemists, and clinical pathologists, a new device is rarely ready for use until it has been tested and worked with at least a year. The first automatic chemical tests (sugar) were ready for use in the Mayo Clinic after about 18 months of hard work and testing, and after devising a different method for analysis than that advised by the manufacturer. The director of the project was a Ph.D. in chemistry and he had at his disposal other qualified men and women, electronic engineers, and mechanics. A large electronic and mechanical shop manned by experts built a print-out machine connected with an IBM electric typewriter before the reports were considered suitable and safe for the clinician. New standards of blood-sugar values also had to be established. A simple test? "Just put a little blood in a cup and see the report come out." And cheap! Only a few cents a test. Such systems still must be under constant intelligent supervision and always will have to be.

The Coulter blood counter is also a case in point. "Takes only 15 seconds to make a count." Has any laboratory reduced its number of technicians after adopting the instrument? If it is used on a large scale (and on a small scale it is useless), it requires automatic measuring devices for diluting blood and a print-out mechanism to assure freedom from typographic errors. All these devices have to be serviced by experts, and the old skills of hand and eye counts also have to be maintained. Counts on leukemic blood are not accurate with these machines, and samples drawn from the vein are necessary for the accuracy of the machine to be utilized. Such samples are more difficult to obtain than those from the finger, and hence they cost more.

Perhaps the test that is most commonly termed "simple" is the one to determine the prothrombin time. Here one merely adds 0.1 ml. of a solution of a simple calcium salt and an equal amount of thromboplastin to a measured quantity of plasma and then notes the length of time it takes to form a clot. Any fool can do that. Can he? Why then do so many patients under treatment with anti-

coagulants get into so much trouble? Just when is the clot to be called "finished"? Why, in a competent laboratory, are so many errors detected in the prothrombin time of referred patients? Did you ever see a good technician prepare and standardize a thromboplastin preparation? This solution is the heart of the test. Commercial preparations are on the market. Have you ever submitted them to critical evaluation? This is not a simple assay. Determinations of prothrombin time are not tests to be performed by just anybody, if the interest of the patient is kept in mind. Even the temperature of the water-bath in which the test is performed can make a lot of difference in the results—or did you know that the test should be performed in a constant-temperature water-bath? I have seen it performed in doctors' offices by receptionists who thought a water-bath usually required soap.

Blood grouping and the determination of the Rh factor are other very "simple" tests. Just add a drop of test serum or cells to a drop of the patient's cells or serum and observe if agglutination takes place. Why then do test laboratories report from 5 to 35 per cent errors in tests performed by referring laboratories? Why do patients still receive mismatched blood? There are numerous reasons that can be found in any good standard text. Because the pitfalls are numerous, these tests are not simple but require patience, knowledge, training, alertness, careful observation, attention to seeming trifles, detailed supervision, and the left hind foot of a graveyard rabbit in your hip pocket. Even so fortified, you'll make your share of errors.

When one comes to deal with admittedly slightly more complicated tests, and there are some, trouble piles up by the square and cube. Look, for example, at the correlations in testing a given sample of blood by several excellent laboratories using the same or different methods for the detection of syphilis. It will be difficult to find the correlation. These tests are fraught with infinite difficulties and should only be undertaken in competent laboratories that do not look upon such tests as simple procedures. To be forewarned is surely to be forearmed.

It is high time to stop misleading the public and the physician about laboratory tests. None is simple and certainly none is extremely simple. They are all involved, complicated, and full of pitfalls and possible inaccuracies clear down to the written report on the patient's history. It takes a clear appreciation of these many possible errors and a long period of training and experience in order to master laboratory procedures to an acceptable level. I suppose that is why we need and have clinical pathologists.

—Editorial by Thomas B. Magath, M.D.,
AMERICAN JOURNAL OF CLINICAL PATHOLOGY,
39:630-632, (June) 1963. Reprinted with
permission of the author and editors.

AMA Warns of Danger in Preseason Football Drills

High school and college football players and coaches are warned once more by the American Medical Association of the dangers of vigorous physical exercise in the blistering hot sun of early September.

The AMA's Committee on Medical Aspects of Sports urges special care against heat exhaustion or heat stroke in the hot and sometimes humid days of late summer as the football training season begins.

Gradual adjustment to vigorous hot weather activity is important to avoid trouble, and adapting of salt and water intake to weather conditions is equally essential. The normal, healthy athlete can become conditioned to a hard training grind in about one week, if the schedule allows for gradual adjustment.

Replacement of water lost from the body during workouts is important, the AMA says, pointing out that the old idea that water should be withheld from athletes during training sessions has no scientific foundation.

Restriction of water can lead to heat exhaustion by depleting water in the body. Water lost through heavy perspiration must be replaced, hour by hour. Half a glass at a time is the recommended amount; gulping of large quantities of water during workouts is not recommended.

Extra salting of food will take care of the replacement of salt loss by sweating during training. Salt tablets ordinarily aren't needed. The tablets, especially on an empty stomach, can be irritating and may be poorly absorbed.

Symptoms of water and salt depletion may include headache, nausea, hallucinations and weak and rapid pulse. Coaches are urged to watch athletes carefully for signs of lethargy, inattention, stupor, awkwardness or unusual fatigue.

Eight suggestions are offered to help prevent heat exhaustion and heat stroke during hot weather athletic activity—

- Require a careful medical history and check-up prior to beginning of practice.
- Schedule workouts during cooler morning and early evening hours in hot weather.
- Acclimatize athletes in hot weather-activity by carefully graduated practice schedules.
- Provide rest periods of 15 to 30 minutes during workouts of an hour or more in hot weather.
- Supply white clothing (to reflect heat) which is loose and comfortable (to permit heat escape) and permeable to moisture (to allow heat loss via sweat).
- Furnish extra salt and water in recommended amounts during hot weather.
- Watch athletes carefully for signs of trouble, particularly the determined athlete who may not report discomfort.
- Remember that the temperature and humid-

ity, not the sun, are the important factors. Heat exhaustion and heat stroke can occur in the shade.

Why Children Run Away From Home

Children run away from home because of an overwhelming sense of helplessness in the face of real or imagined subjugation by their parents, according to Theodore Leventhal, Ph.D., a psychologist at Clark University, Worcester, Massachusetts.

A feeling of being unable to control his external environment is the factor that differentiates the runaway from most other disturbed children, he said. "It seems reasonable to expect that individuals who feel overwhelmed, pressured, and humiliated in and by a situation, which they also believe they cannot alter and which may humble them even more, will feel progressively more desperate and will try to remove themselves from this situation," he said. "Moreover, if they have the physical means, which children progressively do, the older they become, they will remove themselves physically. . . ."

Dr. Leventhal reported on a study of 42 runaways and 42 other troubled children seen at a child guidance clinic, in the August issue of *ARCHIVES OF GENERAL PSYCHIATRY*. He found that runaways, more frequently than the comparison group, complained of being "picked on," coerced, falsely accused, ridiculed, duped, humiliated, or used by others. The common denominator of these complaints, he said, seems to be a lack of respect for the child and a feeling of being abused.

Regardless of whether the complaints are real or imagined, he said, the runaway emphasizes external pressure, the anticipation of increases in this pressure, and his powerlessness in the face of seemingly compelling circumstances. The runaway, who views himself as weak and powerless, is so concerned with external control, that he perceives even a simple request by his parents as attempted domination, Dr. Leventhal said.

"To the runaway, the expectation of punishment or rebuke for a failing report card, for example, does not remain confined to just this one concern," he said. "What might be a simple fear of parental criticism to the average child is distorted by the runaway to signify overpowering control, and perhaps accounts for his drastic behavior."

Dr. Leventhal said: "In contrast with lay and even many professional notions concerning the seemingly benign nature of running away, the findings here suggest severe pathology. On the basis of the marked overconcern with loss of control and with ego surrender, and some degree of reality distortion, prepsychotic functioning is suggested."

A recent follow-up study of cases referred to child guidance clinics revealed that runaways

were one of the groups likely to show psychotic reactions as adults, he said.

This concept of why children run away has been used in treating 16 runaways, Dr. Leventhal said. In nine cases, he said, the runaway was able to recognize the distortions involved and was led to a more realistic appraisal of both external reality and himself. In the less successful cases, he said, the parents did seem to overstimulate or subjugate the child to a striking degree, or the runaway persisted in his conviction that he was at the mercy of others.

Errata

The article "Survival Experience of Cancer Patients in Iowa," by Edmund G. Zimmerer, M.D., and Leonard Chiazze, Jr., in the July, 1963, issue of this *JOURNAL* contained a number of errors, because of an unfortunate chain of circumstances. Though we were unaware of the fact, Dr. Zimmerer was fatally ill when we sent him proof of the article for his corrections; the proof was not forwarded to Mr. Chiazze; and the article was consequently published without authors' corrections.

We regret this occurrence deeply, and though corrections in this subsequent issue may do little good, we print them here:

The next-to-last sentence in the first column on page 398 should have been as follows: "The relative survival rate—i.e., the ratio of the observed survival to the survival that would have been expected if the cancer population had been subject to the same mortality as the population under consideration—provides a means of adjusting for expected mortality from causes other than cancer without requiring information on causes of death."

The third sentence in the second column on page 405 should have read: "The reader should be cautioned, however, that here and throughout this paper he should avoid reading great significance into differences of more than two or three percentage points."

On page 406, in the first paragraph below Table 4, the prefix "non-" should have been inserted: "It has been suggested that the lower rates among the non-microscopically-confirmed cases imply that this group includes many patients for whom biopsy was considered either medically inadvisable or unnecessary."¹¹

The last sentence of the first paragraph under the subhead "Urban-Rural Differentials" should have contained the number "three," rather than "four."

In the next paragraph, the references to the pancreas should have been stricken, viz.: "Among males, both buccal cavity and pharynx have a statistically significant difference at the 5 per cent probability level. The urban-rural differential for buccal cavity and pharynx remains when survival by stage at diagnosis is considered."

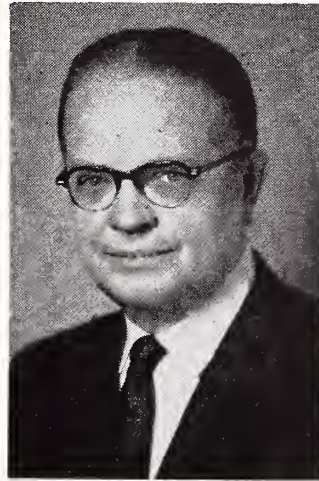
President's Page

During the next few weeks, the IMS is to hold some very important meetings for physicians. The Fall Conference for County Medical Society Officers and Other Representatives will take place at the Savery Hotel, Des Moines, on Wednesday, September 18. Sixteen meetings of physicians will be held at convenient centers throughout the state shortly afterward.

If you are a county society officer, a delegate or an alternate delegate to the IMS, a deputy councilor, or a Blue Shield liaison or a legislative contact man, please be sure to attend the Fall Conference. Nationally prominent guest speakers will be in hand to discuss legislative proposals, prepayment insurance and public relations programs, and IMS officers and committee chairmen will report on subjects such as the implementation of the "implied consent law," the IMS building program and the Iowa Medical Foundation.

Every physician is urged to attend the area meeting in his area, to discuss various aspects of Blue Shield. These sessions have been arranged in pursuance of a directive issued by the 1963 House of Delegates. At your meeting you will have a chance to make your views clear to your state officers and Blue Shield officials. Don't pass it by!

The tentative program for the Fall Conference, and the times and places of the sixteen Area Meetings are listed on the next two pages of the JOURNAL.



C. W. Edwards, Sr.

President

IMS Fall Conference for County Medical Society Officers And Other Representatives Grand Ballroom—Hotel Savery Wednesday, September 18, 1963

9:00 a.m. Registration	2:00	"Let the People Behold You" Mac F. Cahal, Kansas City, Missouri Executive Director, American Academy of General Practice
10:00 "President's Message" C. V. Edwards, Sr., M.D., Council Bluffs, Iowa President, Iowa Medical Society	2:30	"The Washington Scene" Honorable James Bromwell, Cedar Rap- ids, Iowa Member of the House of Representatives United States Congress
10:15 "A Physician Looks at the AMA" Lee Forrest Hill, M.D., Des Moines, Iowa	3:00	"AMPAC" and "IPPL" Mr. Joe Miller, Chicago, Illinois Executive Director, American Medical Political Action Committee Lawrence O. Ely, M.D., Des Moines, Iowa Chairman, Iowa Physicians Political League
10:30 "Your Lawyer Looks at the AMA" Robert B. Throckmorton, Chicago, Illinois General Counsel, American Medical As- sociation	3:30	"Report From the Dean" Robert C. Hardin, M.D., Iowa City, Iowa Dean, College of Medicine State University of Iowa
10:45 "Iowa Blue Shield" George H. Scanlon, M.D., Iowa City, Iowa Chairman, Board of Directors, Iowa Med- ical Service	3:45	"MAA in Iowa" F. C. Coleman, M.D., Des Moines, Iowa IMS Representative on Kerr-Mills Ad- visory Council
11:00 "The Insurance Department Looks at Blue Shield" Mr. William Timmons, Des Moines, Iowa Commissioner of Insurance, State of Iowa	4:00	"Medicine and the Press" Mr. Donald J. Reid, Des Moines, Iowa Managing Director, Iowa Press Association
11:15 "The Public Interest in Utilization of Med- ical Care" Mr. L. A. Orsini, New York, New York Vice Chairman, Health Insurance Council	4:15	"Reapportionment—Yes or No?" Honorable David O. Shaff, Clinton, Iowa Member of Iowa Senate Honorable Tom Riley, Cedar Rapids, Iowa Member of Iowa House of Representatives
11:30 "What's New?" M.D./D.O. Relations John Rhodes, M.D., Pocahontas, Iowa Chairman, IMS Committee on Osteo- pathy IMS Building Program and the Iowa Med- ical Foundation S. P. Leinbach, M.D., Belmond, Iowa Chairman, IMS Board of Trustees Conference on Health Fads and Fallacies John G. Thomsen, M.D., Des Moines, Iowa Chairman, IMS Committee on Public Relations Implied Consent Law Arthur H. Downing, M.D., Des Moines, Iowa Chairman, IMS Committee on Safe Transportation Operation Hometown C. W. Seibert, M.D., Waterloo, Iowa Chairman, IMS King-Anderson Plan- ning Committee Grievance and Judicial Problems C. E. Radcliffe, M.D., Iowa City, Iowa Chairman, IMS Judicial Council		

A Question and Answer Period Will Follow
Both the Morning and Afternoon Sessions

12:30 p.m. Luncheon
Des Moines Room—Hotel Savery

SPECIAL INVITATION

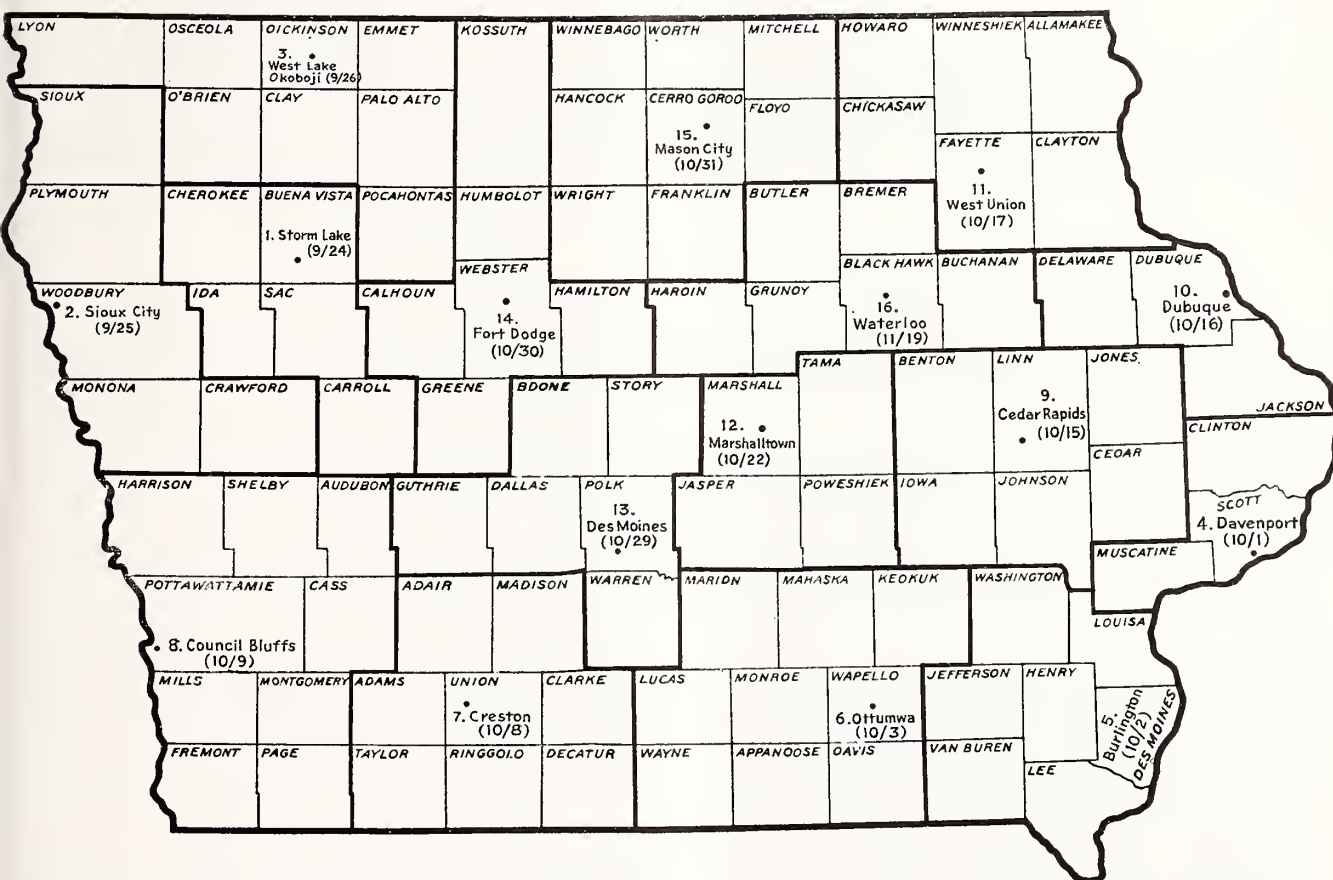
The September Meeting of the Polk County Medical Society Will Be Held at the Fort Des Moines Hotel on Wednesday Evening, September 18.

All IMS County Medical Society Officers and Other Representatives Are Cordially Invited to Attend.

SOCIAL HOUR	5:30 p.m.
	North Room
DINNER	6:30 p.m.
	Grand Ballroom
(Dutch Treat)	

Speaker: Hugh W. Brenneman, East Lansing, Michigan, Public Relations Counsel for the Michigan State Medical Society
"Protecting the Professional Investment"

AREA MEETINGS



Two or more IMS officers and Blue Shield officials will be present at the following meetings to discuss various aspects of Blue Shield and other Society affairs. If possible, please attend the one that has been designated for your county.

1. Tuesday, September 24—7:00 p.m.: Cobblestone Inn, Storm Lake, Iowa. Counties: Buena Vista, Carroll, Cherokee, Ida and Sac

2. Wednesday, September 25—7:00 p.m.: Hotel Warrior, Sioux City, Iowa. Counties: Crawford, Monona, Plymouth, Sioux, and Woodbury

3. Thursday, September 26—6:30 p.m.: Vern & Coila's, West Lake Okoboji, Iowa. Counties: Clay, Emmet, Dickinson, Lyon, Osceola, O'Brien, Palo Alto and Pocahontas

4. Tuesday, October 1—5:30 p.m.: Outing Club, 2109 Brady, Davenport, Iowa. Counties: Clinton, Muscatine and Scott

5. Wednesday, October 2—7:00 p.m.: Hotel Burlington, Burlington, Iowa. Counties: Des Moines, Jefferson, Henry, Lee, Louisa, Van Buren and Washington

6. Thursday, October 3—6:30 p.m.: Ottumwa Country Club, Ottumwa, Iowa. Counties: Marion, Mahaska, Keokuk, Lucas, Monroe, Wapello, Wayne, Appanoose and Davis

7. Tuesday, October 8—7:00 p.m.: Berning Cafe, Creston, Iowa. Counties: Adair, Adams, Madison, Union-Taylor, Clarke, Decatur and Ringgold

8. Wednesday, October 9—6:30 p.m.: Hotel Chieftain, Council Bluffs, Iowa. Counties: Harri-

son, Shelby, Audubon, Pottawattamie, Cass, Mills, Montgomery, Fremont and Page

9. Tuesday, October 15—7:00 p.m.: Hotel Montrose, Cedar Rapids, Iowa. Counties: Linn, Jones, Johnson, Cedar, Benton and Iowa

10. Wednesday, October 16—6:30 p.m.: Dubuque Golf and Country Club, Dubuque, Iowa. Counties: Delaware, Dubuque and Jackson

11. Thursday, October 17—7:00 p.m.: Boot Hill Club, West of Junction of Highways 150 & 18, West Union, Iowa. Counties: Howard, Winneshiek, Allamakee, Chickasaw, Fayette and Clayton

12. Tuesday, October 22—6:30 p.m.: Hotel Tallcorn, Marshalltown, Iowa. Counties: Marshall, Tama, Jasper and Poweshiek

13. Tuesday, October 29—6:30 p.m.: Hotel Savery, Des Moines, Iowa. Counties: Story, Boone, Dallas-Guthrie and Polk (includes Warren)

14. Wednesday, October 30—6:30 p.m.: Hotel Warden, Fort Dodge, Iowa. Counties: Webster, Calhoun, Hamilton, Greene, Kossuth and Humboldt

15. Thursday, October 31—6:30 p.m.: Hotel Hanford, Mason City, Iowa. Counties: Hancock-Winnebago, Worth, Cerro Gordo, Wright, Franklin, Mitchell and Floyd

16. Tuesday, November 19—6:30 p.m.: Clayton House, West Mullan and Jefferson Streets, Waterloo, Iowa. Counties: Hardin, Grundy, Black Hawk, Butler, Bremer and Buchanan

THE JOURNAL *Book Shelf*



BOOK REVIEWS

ENDOCRINE AND METABOLIC ASPECTS OF GYNECOLOGY, by Joseph Rogers, M.D. (Philadelphia, W. B. Saunders Company, 1963. \$8.00).

This text is a reasonably comprehensive review of various endocrine aspects of gynecology. The chapters cover the physiology of menstruation, chromosomal aberrations and gonadal defects, amenorrhea, functional and dysfunctional uterine bleeding, menstruation as related to systemic disease, dysmenorrhea, premenstrual tension, adolescence, menopause, ovulation and infertility.

In the chapter on chromosomal aberrations and gonadal defects, Dr. Rogers presents a very clearcut and understandable explanation for defects of chromosomes. Within the past five years, much has been written about nondisjunction, mosaics, translocation and deletion in chromosomes. Examples of each, explanations for their occurrence, clinical problems and methods of diagnosis are presented. The chapter on functional and dysfunctional uterine bleeding presents logical definitions of common terms in gynecology, such as *menometrorrhagia*, *hypermenorrhea*, *hypomenorrhea*, *oligomenorrhea* and *polymenorrhea*. The chapter on menstruation and systemic diseases lists various other conditions such as thyroid disease, liver disease and blood dyscrasias which can bring about abnormal bleeding problems. These possibilities are often overlooked in the evaluation of the menorrhagic patient, and they deserve emphasis. Dr. Rogers also directs our attention to the cyclical relationship between psychological conditions, neurologic diseases and skin disorders, and menstruation.

Most of the chapters would, I believe, be of interest to the generalist, and a couple of them would attract the attention of the specialist. I feel that anyone would gain from studying and following-up the excellent list of references at the end of each chapter. It seems that the author has done exactly what he intended to do—to present a concise review of endocrine and related problems in gynecology. He has eliminated much of the theoretical speculation and experimental evidence, and has oriented his text toward the clinical problems.—E. J. Hagen, M.D.

CLINICAL GASTROENTEROLOGY, SECOND EDITION, by Eddy D. Palmer, M.D. (New York, Hoeber Medical Division, Harper & Row, Publishers, 1963. \$22.50).

This volume stands as a monument to Col. Eddy Palmer, one of the most vigorously enthusiastic proponents of esophagoscopy and gastroscopy in clinical gastroenterology. With medical knowledge advancing with bewildering rapidity in many directions, it is re-

freshing to see the broad subject of clinical gastroenterology brought up-to-date so competently.

The iconoclastic candor with which the author strikes at deeply-entrenched concepts regarding peptic-ulcer and gastric-cancer therapy will not evoke plaudits from medical classicists. Col. Palmer feels that frequent bland feedings, antacids and anticholinergics are impotent gestures in peptic-ulcer therapy. Alcohol, coffee and tobacco, all in moderation, are not interdicted. The value of psychiatric interviews is stressed. Gastric cancer is dismally described as an incurable disease in almost all cases, despite the aggressive efforts of both diagnosticians and surgeons.

Col. Palmer's most impressive contribution to medicine has been the vigorous approach to massive upper-gastrointestinal hemorrhage. As soon as the patient is admitted to the hospital, blood is drawn for cross-matching, and blood replacement is begun. It is continued as the clinical course dictates. The history and physical examination are conducted as completely as the clinical situation permits. A No. 30 French-Ewald tube is passed into the stomach, and a thorough ice-water lavage is carried out. Hemorrhage is temporarily controlled in approximately 90 per cent of the patients.

Esophagoscopy examination is carried out as soon as the Ewald tube has been withdrawn. Gastroscopy immediately follows esophagoscopy. The trans-esophagoscopic gastroscope is passed through the esophagoscope. The source of bleeding is located by following a blood rivulet to the lesion. Discovery of fresh blood running back into the stomach through the pylorus permits a presumptive diagnosis of bleeding duodenal ulcer. Fluoroscopic examination immediately follows gastroscopy.

Signs and symptoms of gastrointestinal disease have been incorporated intelligently, and have been described in language that is lucid and delightful. The book is unhesitatingly recommended to the practitioner who is interested in the bedside diagnosis of gastrointestinal disease. Col. Palmer's therapeutics, however, remain somewhat controversial.—James P. Gould, M.D.

ORGANIZATION AND ADMINISTRATION IN WORLD WAR II, by Blanche B. Armfield, M.A., prepared and published under the direction of Lt. Gen. Leonard B. Heaton. (Washington, D. C., Office of the Surgeon General, Department of the Army, 1963. \$6.25).

This book, published in 1963 by the Office of the Surgeon General, Department of the Army, contains 613 pages. It includes numerous pictures of Army surgeons, and gives the build-up of the Medical Department of the Army from the time of the initial emergency in 1939 through the entire World War II. The various theaters of operations are taken up in separate sections, and needless to say, since at that time the Air Force was a part of the Army and was called

the "Army Air Force," all of its organization is reviewed in this volume.

A reader who was in the Army Medical Corps during World War II would find the section devoted to the theater in which he was stationed of great interest to him. Having been stationed in the E.T.O., in Ireland and England, this reviewer found the section on the development of the Etousa Service Office under Gen. Paul Hawley to be of particular interest. At that time, the executive officer to Gen. Hawley was Col. Howard W. Doan, a 1932 graduate of the S.U.I. College of Medicine who is now a major general.

The more one reads in this book, no matter in which theater he is interested, the more he appreciates how enormous the problems were in providing adequate hospitalization, medical supplies, personnel and evacuation facilities. No medical problems, as such, are covered in this book, for it is concerned only with "Organization and Administration."—C. Harlan Johnston, M.D.

Appeal From Morrell Evokes Reply

The program providing health insurance and sick leave pay for workers in the Morrell meat-packing plant in Ottumwa is imperiled by workers' abuse, according to President W. W. McCallum of Morrell and President Walter E. Thomas, of Local No. 1 of the meatpackers' union. Too many persons have been getting excessive hospital-medical-surgical benefits and are apparently staying off work for unjustifiably long periods. Insurance premiums, plus sick leave, cost Morrell more than \$1 million in 1962, as the Morrell company pays the entire bill under terms of the contract with the United Packinghouse Workers Local No. 1. The union is cooperating fully in a drive to bring down the costs, though it wants to keep the present benefits for those who really need them.

A joint letter, signed by President McCallum and President Thomas was sent to hospital administrators and to physicians in the Ottumwa area, appealing for help in controlling the costs

of the health insurance. The letter concluded: "However, we must also depend upon the medical profession and hospital administration in the Ottumwa area for their fullest assistance in preventing abuses. . . ."

An anonymous physician reacted with vigor in a long letter replying to the union. The doctor said health expenses are only partly due to "uncontrollable events," such as "acts of God." Such expenses, he added, "are in a large part elective or semi-elective in nature. They are not an absolute necessity in the sense that you have to go to the doctor or the hospital, etc. In contrast, all other types of insurance pay when some unplanned, uncontrollable event occurs (death, fire, auto accident), with a clearly definable amount of damage incurred." He explained that the Morrell policy pays when "hospitalization is necessary for treatment." What is "necessary" in medical care is hard to define, he added. He pointed out that patients often feel hospitalization is necessary because they do not want to pay for extensive diagnosis as outpatients.

The doctor observed that no other kind of insurance leaves it up to those financially involved to decide how much the insurance payments should be. "Health insurance places the physician in the absurd position of acting for the patient's benefit and as the insurance company's agent simultaneously. . . . We therefore get abused from both directions. Most physicians feel as I do, that their job is primarily that of taking care of the patient and seeing that he gets the maximum benefits allowable under the provisions of the insurance.

"It isn't our primary job to prevent abuses of the insurance. That is the insurance company's job and the patient's job. Since most health insurance companies exert only very poor supervision over how their insurance is used, and since most patients feel their job is to maximize their benefits, the physician is put under tremendous pressure to utilize the insurance up to the hilt."

BOOKS RECEIVED

PREVENTIVE MEDICINE IN WORLD WAR II, COMMUNICABLE DISEASES, VOL. VI, prepared and published under the direction of Lt. Gen. Leonard D. Heaton. (Washington, D.C., Office of the Surgeon General, Department of the Army, 1963. \$6.25).

A HISTORY OF WINE AS THERAPY, by Salvatore P. Lucia, M.D. (Philadelphia, W. B. Saunders Co., 1963. \$0.00).

THROMBOPHLEBITIS, by Roger M. Morrell, M.D. (New York, Grune & Stratton, Inc., 1963. \$6.50).

SYNOPSIS OF EAR, NOSE AND THROAT DISEASES, SECOND EDITION, by Robert E. Ryan, M.D., et al. (St. Louis, C. V. Mosby Company, 1963. \$7.50).

CLINICAL EXAMINATIONS IN NEUROLOGY, SECOND EDITION, by members of the Sections of Neurology and the Section of Physiology, Mayo Clinic and Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota. (Philadelphia, W. B. Saunders Co., 1963. \$8.50).

HERNIA, by Amos R. Koontz, M.D. (New York, Appleton-Century-Crofts, Inc., 1963. \$11.95).

DISEASES OF THE CHEST, SECOND EDITION, by H. Corwin Hinshaw, M.D., and L. Henry Garland, M.D. (Philadelphia, W. B. Saunders Co., 1963. \$20.00).

AMA Rural Health Conference

The 16th National Rural Health Conference will be held at the Arlington Hotel in Hot Springs, Ark., Sept. 20-21.

Theme of the meeting, sponsored by the Council on Rural Health of the AMA is "Health Is a Bargain."

Topics to be discussed include the health care dollar, mental health, oral hygiene, what not to do before seeing a physician, immunization, animal diseases transmissible to man, and the Hattieville, Ark., rural community improvement project.

Among the participants will be Dr. Norman A. Welch, Boston, president-elect of the AMA, Dr. R. B. Robins, Camden, Ark., member of the AMA Board of Trustees, Dr. Robert Felix, director, National Institute of Mental Health, Bethesda, Md., and Dr. W. Wyan Washburn, Boiling Springs, N. C., chairman of the Council on Rural Health.

Iowa Association of Medical Assistants

What Is Your Attitude?

Why is it that the things we like to do are the ones that we do most easily? And why do we put off doing the things that we find disagreeable or difficult? It's all a matter of attitude.

Let's go back to the "smile in the voice" about which we should be sure when we answer the telephone. It's impossible to be really grouchy when we smile, for one can't frown and smile at the same time. Oh yes, one can wrinkle her forehead and still smile, but when you do that, aren't your thoughts suggesting that your facial contortions are rather ludicrous—puzzling, perhaps, but humorous? The pup that licks your hand can't growl while he is showing his affection for you.

Sometimes your attitude toward your work is more important than your skill. If you look upon disagreeable tasks as drudgery, you don't perform them well, but if you show enthusiasm—even though it is only a pretense—the fact that you seem to be enjoying yourself makes the work easier to do. You find you are becoming more proficient, and before long you are actually enjoying yourself. You are experiencing the satisfaction of a job well done.

Oscar Levant says that Dinah Shore upsets his diabetes—meaning, perhaps, that he can't "enjoy poor health" while she is around. Miss Shore may never win a Metropolitan Opera audition, but we must admit that she seems to enjoy herself thoroughly in her TV shows, and that her attitude is contagious. The other performers and the viewing audience share her feeling of well being.

If the job at hand is one that you keep putting off because it is hard or otherwise distasteful, you might try dividing it and doing it in parts. Just thinking about it doesn't accomplish anything, unless your thoughts are constructive. Plan the work, and then start right in, for procrastination never makes things easier. Or think of a new way to do the job. Perhaps you are bored with the way in which you have been doing it. Think of it in terms of what you are accomplishing and of the satisfaction you will feel as you contemplate the result.

Since you get the greatest rewards from the things you, yourself, do, develop a positive attitude. The negative approach accomplishes little, and makes you feel miserable. Have you told yourself some of these things:

"It's never worked before."

"It wasn't my idea, so why should I try it?"

"I don't think I'd like that."

"Why should I knock myself out? No one appreciates what I do."

"Why should I be nice to Mrs. Smith? She always growls at me."

"There's no need for me to be on time, for no one else is."

"My work is done, so why should I help anyone else?"

How do you know an idea is worthless until you have tried it? Perhaps your initial failure was due to the method you used, and a new approach might bring success. And how do you know you don't like something until you have tried it? We develop a fondness for a new food by tasting it repeatedly. Maybe no one has told you, recently, that your work is appreciated, but none of us can expect a pat on the back for every well-performed task. You, however, can enjoy a sense of satisfaction from your accomplishment, whether or not anyone else notices or mentions your good work!

Of course Mrs. Smith growled at you; if she hadn't been in considerable discomfort, she probably wouldn't have come to see the doctor. Try smiling pleasantly next time, regardless of her scowl, and you may help her to feel better and put her into a pleasant frame of mind.

Your example of being on time or getting your work done promptly could be contagious. Sharing responsibility and helping others have their own rewards. Cooperation begets cooperation. Perhaps your negative attitude has been irritating to your coworkers. You and they should work as a team, not as individuals.

Take a little personal inventory. Revise your thinking to the positive approach. Develop an attitude that commands respect. Stop worrying about "probables," and concentrate on accomplishments. Then you will succeed, for you have all the talents and skills that can make success possible.

Things are not always what you think they are, but *you* are what you think yourself to be!

—HELEN G. HUGHES

Medical Assistants'
Annual Meeting
October 9-13
Eden Roc Hotel
Miami Beach, Florida

Fifth Annual Inservice Workshop

The State University of Iowa's Continuing Education Program will offer its Fifth Annual Inservice Workshop for Medical Assistants, in Iowa City, October 6 to 9, 1963. It is designed to give medical assistants practical information about the general procedures for organizing and performing the business and routine activities of the modern medical office.

Sunday, October 6

Registration, Iowa Center
Dinner, Bill Zuber's Restaurant, Homestead (Amana Colonies)
Orientation

Monday, October 7

Welcome—William D. Coder, director of conferences and institutes
"Human Behavior and Its Causes: Why Adults Behave as They Do"—Don Sherriff, manager, Bureau of Labor and Management
"Child Psychology: Why Children Behave as They Do"—Professor Ralph Ojemann, Iowa Child Welfare Research Station
Tours of selected Iowa City offices, for observation of various office procedures

Tuesday, October 8

"The Importance of Proper English Usage"—Richard Lloyd-Jones, English Department
"Business Letters"—Dr. Norman Kallous, College of Business Administration
"Reception Techniques and Appointment Making"—Miss Edith Ennis, College of Business Administration
Dinner, Mayflower Inn, with the Iowa City Chapter, IAMA

Wednesday, October 9

"Legal Problems in the Physician's Office"—Professor Sam Fahr, College of Law
"Proper Use of the Telephone"

Classes will begin at 8:00 a.m. on Monday, October 6, and will extend through Wednesday afternoon, October 9, but no one should miss the get-acquainted, country-style dinner on Sunday evening at 6:00. The fee of \$35 will cover housing at the Iowa Center for three nights, Sunday through Tuesday; breakfasts, Monday through Wednesday; the Sunday night "get-acquainted" dinner; coffee breaks; all instructional material; and the attendance certificate.

Enrollment will be limited to 50 registrants, and advance registration is essential. For further information, write to Dr. William D. Coder, Extension Division, State University of Iowa, Iowa City.

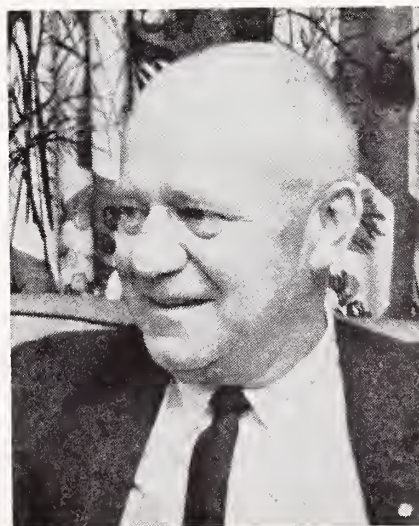
Medical Consultant to Department of Social Welfare

Elmer M. Smith, M.D., has been named medical consultant to the State Department of Social Welfare, effective October 1, 1963. He says, "I am looking forward to my association with the State Department of Social Welfare. My job will be to see that Medical Aid to the Aged and public assistance patients are medically eligible, and that they receive the most care for the public dollar."

Dr. Smith graduated from Coe College in 1931, and from the SUI College of Medicine in 1935. He interned at University Hospitals, and started private practice at State Center in 1937. He enlisted in the Army Air Force in 1940, served 5½ years and attained the rank of colonel. In 1945, following his discharge from the Army, he began private practice in Eagle Grove, where he has remained ever since.

He is the alternate delegate of the Iowa Medical Society to the AMA, and is a member of the IMS Committee on Insurance. He is the delegate of the Iowa Chapter in the Congress of Delegates of the American Academy of General Practice, and is a member of its National Commission on Legislation and Public Policy. He is also a member of the AAGP's National Committee for State Officers.

Dr. and Mrs. Smith plan to move to Des Moines on October 1. They have three grown children: Capt. Robert Smith, Army Medical Corps; Miss Margaret Louise Smith, a registered nurse in San Francisco; and James Edward S. Smith, U. S. Air Force, Offutt Field.



THE DOCTOR'S BUSINESS

Give Yourself Ample Time!

HOWARD D. BAKER

Waterloo



In recent years, great emphasis has been placed upon the importance of one's having adequate capital for income *at retirement age*. Little importance, however, has been attached to the achievement of a degree of financial independence *before* retirement age.

The years 45 to 64 are the truly critical ones in a man's financial life. The young man in his thirties who thinks that there is still "plenty of time," and consequently fails to start saving and investing, is operating under a grave delusion.

Facts indicate that if the "average" person has not accumulated a reasonable amount of capital by age 45, he is unlikely ever to do so. He has started his search for financial security at too late an hour, and the odds are strongly against his gaining sufficient momentum to make up for lost time.

There are two reasons for this; one is pure arithmetic, and the other reflects the economic and psychological influences under which we live. The arithmetic is simple. We all know that a dollar saved today will eventually be worth more than the dollar we *may save* 20 years hence, provided that it is invested in a secure equity that will grow in value as inflation occurs. Today's dollar, invested wisely, will earn more dollars as the years go by.

For example, based upon a 5 per cent annual compound interest rate, the accumulation of \$1,000 at age 65 requires an investment of:

\$142 at age 25	377 at age 45
181 at age 30	481 at age 50
231 at age 35	614 at age 55
295 at age 40	784 at age 60

Stated in another way, this means that \$181 invested at age 30 will grow into \$1,000 at age 65, assuming a 5 per cent increment. This same \$181 invested at age 50 will grow only to \$375, and if invested at age 60, it will grow merely to \$232.

It is obvious from these figures that one dollar

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

invested at age 30 will accomplish as much as two dollars invested at age 45, and will be worth as much as nearly \$4.50 invested at age 60. As the rate of return and appreciation goes up, the value of early investing is magnified.

The greatest allies a man has in the capital-building process are (1) time and (2) return on capital. These two must work together to permit a person to accomplish his financial goals. Take away time, and capital is denied an opportunity to grow slowly but surely. If one tries to force capital to accomplish too much too soon, he runs the risk that it will disintegrate from over-speculation.

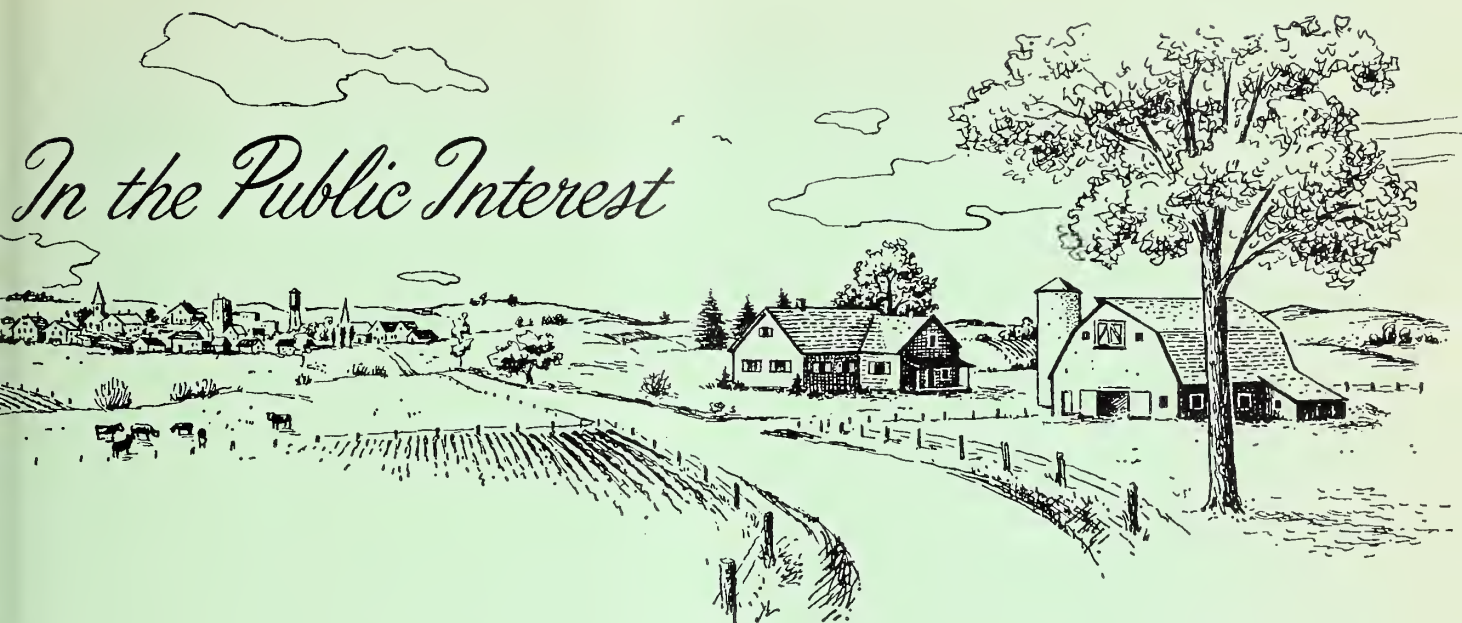
Take away yield—the work that money can accomplish for itself—and only a few men could accomplish any degree of financial security. It is capital at work, rather than the man at work, which brings eventual financial independence. True, each of us must work and save in order to gather the basic capital, but afterwards a man's degree of financial independence will be directly dependent upon the time that remains for capital growth and upon the productivity or the yield realized from invested capital.

HOW DO YOUR FINANCIAL ACCOMPLISHMENTS MEASURE UP?

Let's call a spade a spade! Can any man say that he is financially successful—whatever his current income from his profession may be—when he has little or no income to report on page 3 of his Federal Income Tax Return? A man of 45 should be well on his way toward accomplishing his financial objectives, rather than just starting toward them.

The investor who lulls himself into believing that he can start his program *after* his home has been luxuriously furnished, *after* his children have been educated, *after* he has traveled to Europe, and *after* various other major expenditures is in for a rude awakening. Both simple arithmetic and long-ingrained habit are building up strong odds against him!

The ingredients for success are an early start and tenacity in carrying out the plan. These will insure accomplishment; complacency and postponement will insure failure.



In the Public Interest

The Iowa Medical Society Has Created The Iowa Medical Foundation

As a means of expanding and improving its charitable and educational activities and in order to facilitate its sponsorship of postgraduate medical education and of research in medical and health-related fields, the Iowa Medical Society has recently set up an organization to be known as the Iowa Medical Foundation, and invites physicians and all other interested people to make donations to it.

An instrumentality that solicits contributions and uses them in accordance either with the expressed wishes of the donors or with the best judgment of a board of directors, within their approved scope of action, is usually called a foundation, and governmental units have agreed not to tax gifts to it, either in the income of the donor individual or corporation or in that of the recipient foundation. In these days of high taxes, it is expected that the Iowa Medical Foundation will be a means by which the IMS can use all, or very nearly all, of the money which its members want spent on public service projects, and the physicians and others with philanthropic intentions can be sure of having as much as possible of their gifts used for projects of which they completely approve. Expenses for fund-raising and for administration of the Iowa Medical Foundation will be kept to a minimum.

THE IMS EDUCATIONAL FUND HAS BEEN MERGED INTO THE IOWA MEDICAL FOUNDATION

For many years, the IMS has engaged in a variety of activities designed to serve the public rather than just the medical profession. The chief of these, its medical-student loan program, has been con-

ducted through a trust that now, mainly for the sake of simplicity of organization, has been made a part of the newly-formed Iowa Medical Foundation. Donors who wish their gifts to be used for medical-student loans can still, of course, earmark them for that purpose and be sure that they will be so used.

At the IMS Annual Meeting last April, Dr. G. H. Scanlon, then the president of the Society, reported that since its inception the Educational Fund had made loans to a total of 155 medical students. Forty-five of them had repaid the borrowed money in full, and 110 loans were outstanding. In terms of dollars, his report was as follows:

Total of loans since the start of the program	\$225,913.42
Loans repaid	75,491.11

Loans outstanding as of April 5, 1963 .. \$150,422.31

Interest on the sums borrowed, at the rate of five per cent, not compounded, doesn't start accruing until the borrower has finished his medical education and has begun licensed practice, but the sums paid in interest have been sufficient to cover the costs of administering the program.

The Fund is self-perpetuating, for as soon as one borrower repays his loan, money is available to a student who has need of it, and virtually no borrowers have defaulted. Yet some requests for loans have had to be refused. Up to the present time, applications have been accepted from medical-school

juniors and seniors (and some of those have had to wait), but many freshmen and sophomore medical students have financial problems that are equally or more serious.

OTHER PROJECTS ARE BEING PLANNED

Other projects for the Iowa Medical Foundation are as yet no more than in the planning stages, but the activities of the Charitable, Educational and Scientific Foundation of the State Medical Society of Wisconsin, which has been in existence for nearly 10 years, can serve as a partial blueprint. Some of the postgraduate short-courses of the medical schools in that state, for the benefit of doctors in private practice—and thus of their patients—are financed in part through the Wisconsin Medical Society's Foundation, and surveys of various sorts designed to measure health needs have been subsidized by it. The Wisconsin Society has a medical museum at Prairie du Chein, and though the IMS doesn't presently contemplate building anything comparable, it may be that it will want to start a collection of medical artifacts when and if its new headquarters building has been constructed and the necessary room is available. Wisconsin may use its Foundation as a means of giving aid to physicians and their families that have been impoverished by disasters, and such a possibility may be explored by the directors of the Iowa Medical Foundation.

STRUCTURE OF THE IOWA MEDICAL FOUNDATION

The Board of Directors of the Iowa Medical Foundation consists of nine members—three being the members of the IMS Board of Trustees, two being the immediate past-presidents of IMS, and the remaining four being IMS members chosen by the five directors previously mentioned.

GIFTS AND BEQUESTS ARE INVITED

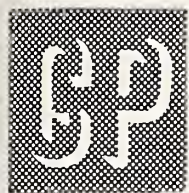
Physicians and all other Iowans who wish to help achieve the objectives outlined above, for the Iowa Medical Foundation, are urged to support it

financially and to tell their friends about it. As has been said, they can designate particular projects on which they want their money to be used, but if their interest is in an activity on which the Foundation hasn't yet announced its intention of starting, it would be merely practical for them to consult with the directors before making their gifts or bequests. It is hoped that most contributions will be unrestricted—i.e., to be used for whatever purpose the directors see fit—since times change, and objectives that seem important today may lose priority very rapidly.

In particular, it is hoped that gifts and collections made in memory of Iowa physicians will henceforth be turned over to the Iowa Medical Foundation, since a single large sum of money—the aggregate of many smaller ones—can accomplish major objectives dear to the hearts of the doctors whose memory the givers wish to honor.

In establishing and urging support of the Iowa Medical Foundation, the IMS has no wish to pre-empt funds that otherwise might have gone to the American Medical Association's Education and Research Foundation (AMA-ERF). Rather, it is hoped that Iowa doctors and their relatives and friends will find it possible to support both. A major AMA-ERF project is the supplementing of the operational funds of the nation's medical schools, and since that money is used for essential functions and the various deans have come to rely upon it, any curtailment of AMA-ERF's income would be disastrous. As regards student loans and subsidies for research, the activities of AMA-ERF and the Iowa Medical Foundation will overlap to some extent, it is true. But it is unlikely that AMA-ERF will ever succeed in meeting all such needs in Iowa, or indeed in any other of the 50 states, and thus it is necessary that activities of those sorts be intensified at the state level.

Moreover, since all of us are Iowans, and since many of those whose memory we seek to honor were Iowans too, it is appropriate for us to make gifts, in their names, for the protection and improvement of health in Iowa.



Iowa Chapter of the American Academy of General Practice

Fifteenth Annual Scientific Meeting

Everyone who attended the Spring Postgraduate Conference in June, at the New Inn in Okoboji, agreed that the scientific program presented there was one of the best. The same committee on education that formulated that program has scheduled similarly outstanding presentations for the Fifteenth Annual Scientific Assembly of the Iowa Chapter, which is to be held on September 16 and 17 at the Savery Hotel, in Des Moines.

All physicians and their wives are invited. Plan to attend this two-day scientific session. There will be the usual Hospitality Room, where the ladies can have a cup of coffee, take off their shoes and relax between shopping trips or other activities. Following the luncheon on Monday noon, September 16, the Iowa Chapter will conduct its annual business meeting and election of officers.

The annual banquet will be held at the Hotel Savery on Monday evening, and all physicians and their wives will want to see and hear the special entertainment provided by Miss Fran Allison, of "Kukla, Fran and Ollie" fame.

Following is the scientific program:

MONDAY, SEPTEMBER 16

Morning

- "Corticosteroid-induced Complications of Rheumatoid Arthritis"—George E. Ehrlich, M.D., New York
- "The Gist of Cataracts"—Malcolm A. McCannell, M.D., Minneapolis
- "Ventral Herniorrhaphy, with Reference to a New Technique to Be Considered in Selected Cases"—Charles W. Mayo, M.D., Rochester, Minnesota
- "Frequently Unrecognized Aspects of Rheumatoid Arthritis"—Dr. Ehrlich

Afternoon

- "The Red Sore Eye"—Dr. McCannell
- "Carcinoma of the Rectum"—Dr. Mayo
- "Some Methods and Techniques Used in Rehabilitation of the Stroke Patient"—William D. deGravelles, Jr., M.D., Des Moines

TUESDAY, SEPTEMBER 17

Morning

- "Electrocardiogram in Children"—Robert A. Tidwell, M.D., Seattle
- "Some Observations on Cancer in Children"—Robert J. Samp, M.D., Madison
- "The Hormonal Control of Reproduction"—M. Edward Davis, M.D., Chicago

"Hearing and Related Problems"—Case presentations and general discussion presented by the State Committee for the Conservation of Hearing
Luncheon address: "Hadacol, Honegar and Hocum"—Dr. Samp

Afternoon

- "Physiological Gastrectomy by Gastric Freezing"—Henry Sosin, M.D., Minneapolis
- "The Diagnosis of Rheumatic Fever"—Dr. Tidwell
- "Management of the Menopause"—Dr. Davis
- "Control of Massive Upper Gastrointestinal Hemorrhage with Local Gastric Hypothermia"—Dr. Sosin

Medical Meeting in Las Vegas

A scientific program designed to provide information of everyday use to a broad spectrum of medical interests will be presented at the Twelfth Biennial Rocky Mountain Medical Conference, October 30 to November 2, 1963, in Las Vegas, Nevada.

The Conference, held in conjunction with the 59th Annual Meeting of the Nevada State Medical Association, will feature scientific papers and panel discussions by 16 nationally known physicians, plus an histologist, an embryologist, and a vice-president of a national liability insurance company.

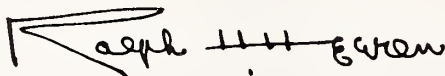
Registration at the Conference is open to any doctor of medicine. A registration fee of \$20 which includes a luncheon will be charged.

The Rocky Mountain Medical Conference is a joint enterprise of the state medical societies of seven states; Colorado, Idaho, Montana, New Mexico, Nevada, Utah, and Wyoming.

Guest speakers and panelists at the Las Vegas meeting, which will be held at the newly enlarged Dunes Hotel, include, in order of their appearance on the program: W. Gerald Rainer, M.D.; George V. Mann, M.D.; Leland S. McKittrick, M.D.; Foster Matchett, M.D.; C. M. Pomerat, Ph.D.; I. V. Ponsetti, M.D.; Chrichton McNeil, M.D.; Robert L. Egan, M.D.; Conrad Collins, M.D.; G. Melvin Stevens, M.D.; Dwight E. Harken, M.D.; Henry F. Zinnser, M.D.; Henry Zimmermann, M.D.; John H. Laragh, M.D.; Owen H. Wangenstein, M.D.; George A. Constant, M.D.; Pieter A. DeVries, M.D.; and William J. Warren.

For further program details and Conference information, write to: Thomas S. White, M.D., general chairman, Rocky Mountain Medical Conference, 3660 Baker Lane, Reno, Nevada.

STATE DEPARTMENT OF HEALTH



RALPH H. HEEREN, M.D., ACTING COMMISSIONER

State Hygienic Laboratory

RABIES EXAMINATIONS

Comparative studies with the direct microscopic (DM), fluorescent rabies antibody (FRA) and the mouse inoculation (MI) tests were carried out over a period of twelve months. Information shows that the FRA test agrees with the MI test in over 98.8 per cent of the 457 specimens examined. On May 1, 1962, the DM test was replaced by the FRA.

Effective July 1, 1963, the following laboratory policy was adopted:

(1) The FRA test will be run routinely on all specimens and the results will be reported on regular work days the same day the specimen is received, if received in the morning. Four to five hours are required to complete the examination.

(2) If the FRA test is positive a final report is promptly made.

(3) If the FRA test is negative and there is a history of the animal's biting a person, a negative report will be made and the MI test carried out. A preliminary report of the MI test will be mailed on the 15th day and a final report on the 30th day, if negative. If the MI test proves positive, a prompt report will be made.

(4) If the FRA test is negative and there is no history of a person's being bitten, the MI test will not be carried out. Portions of the animal's brain will be preserved and held under refrigeration for 15 days in case a late report of a biting incident is received. In this case the MI test will be carried out.

Above policy was approved by the State Board of Health July 9, 1963.

Hay Fever in Iowa

The Midwest has three distinct pollen seasons, and the pollens of each of them are responsible for various numbers of hay fever cases.

Early spring is the season for pollination of trees. The three species of most importance, with the usual peaks for pollination are: the elm, about the middle of April; the maple, during the first part of May; and the oak, about the middle of May. There are some variations in those dates,

from year to year, because when spring comes early, the trees produce their pollen a little sooner.

The second season is that of grass pollen. It occurs during the early summer. All grass pollens are listed together, for it is exceedingly difficult, if not impossible, to distinguish among the pollens from different kinds of grasses. There are some variations, from year to year, in the occurrence of grass pollens in this area. The season may start as early as May 1, and sometimes it begins as late as the middle of May. However, grass pollen continues in the air during the months of June, July and August, and sometimes for a week or two into September.

The last is the ragweed season, in late summer. It accounts for the troubles of most hay fever sufferers in this area. In Iowa there is no variation, from year to year, in the date of the first production of ragweed pollen. Apparently this plant pollinates when the daylight hours reach a certain length. The plant may be stunted by lack of rain, yet the first ragweed pollen is detected year after year in Iowa during the first week of August. By August 13, the amount has usually reached at least 25 pollen granules per cubic yard of air. This pollen content is considered by most clinicians to be sufficient to produce hay fever symptoms. Ragweed pollen continues in the air until about September 20 in sufficient amounts to produce symptoms. Thereafter, if symptoms of hay fever continue, they probably are due to an exposure to indoor pollens, for example during housecleaning. Frost, at least in this area, has little if any effect on the length of the season, for the plant has produced its pollen and has dropped its seed before any frost. There are some variations in the amounts of ragweed pollen produced from year to year. Rainfall is the most important factor in bringing about a good stand of plants and a good production of pollen.

The year 1962 was a rather typical one for ragweed. The peak of ragweed pollen diffusion, according to the accompanying table, was reached on August 29, rather than on August 31 which is usually the date of the highest count. The count on August 31 may have been slightly influenced in the Iowa City area by a rain which had fallen on the previous day.

These data have been supplied by Roland Rooks,

Ph.D., an associate professor of hygiene and preventive medicine at the SUI College of Medicine. Dr. Rooks has carried on pollen counts regularly for many years. Pollen counts are also conducted in at least two other places in Iowa. One study that has continued over a considerable number of years is that of Dean Byrl E. Benton, of the Drake University College of Pharmacy, in Des Moines. Dr. Benton's records are quite similar to those obtained in Iowa City. He does note one specific change in pollen counts. Because of the intense building program in Des Moines, extending north and west of the pollen-counting station at Drake, the pollen counts there have been reduced materially during the last year or two. The Sioux City Health Department also takes pollen counts, but its figures are for all pollens. It makes no attempt to count each of the separate types of pollen present.

Copies of HAY FEVER HOLIDAY, a pamphlet compiled and revised in 1961 by Oren C. Durham for the Pollen and Mold Committee of the American Academy of Allergy, are available from the State Department of Health. This manual should be of particular interest to physicians who may wish to recommend pollen-free areas to certain of their patients.

POLLEN SURVEY
IOWA CITY, IOWA
1962

RAGWEED POLLEN REPORTED PER CUBIC YARD
OF AIR

August	Grass	Ragweed	September	Grass	Ragweed
1	0	0	3	0	273
2	0	0	4	Rain	
3	2	0	5	0	129
6	8	14	6	0	115
7	4	15	7	0	86
8	4	28	10	0	130
9	8	43	11	0	101
10	2	94	12	0	133
13	3	144	13	0	103
14	0	130	14	0	29
15	7	115	17	0	29
16	13	158	18	0	28
17	7	165	19	0	29
20	7	302	20	0	0
21	7	158	21	0	14
22	8	360	24	0	14
23	Rain		25	0	0
24	Rain		26	0	0
27	7	158	27	0	0
28	3	417	28	0	0
29	0	461			
30	Rain				
31	4	406			

Morbidity Report for Month of
July, 1963

Diseases	July 1963	June 1963	July 1962	Most From	Cases These	Reported Counties
Diphtheria	0	0	0			
Scarlet fever	110	188	88	Johnson, Polk		
Typhoid fever	0	0	0			
Smallpox	0	0	0			
Measles	203	790	125	Dubuque, Polk, Scott		
Whooping cough	6	6	6	Polk		
Brucellosis	8	13	8	Scott		
Chickenpox	124	444	48	Dubuque, Polk, Scott		
Meningococcic meningitis	1	0	1	Polk		
Mumps	133	189	64	Boone, Dubuque, Polk, Scott		
Poliomyelitis	0	0	0			
Infectious hepatitis	17	41	56	Tama		
Rabies in animals	46	41	27	Cedar, Clinton, Dubuque, Jones, Keokuk, Linn, Polk, Washington, Webster		
Malaria	1	0	0	Polk (acquired outside U. S.)		
Psittacosis	0	0	0			
Q fever	0	0	1			
Tuberculosis	33	52	23	For the state		
Syphilis	48	84	68	For the state		
Gonorrhea	84	128	106	For the state		
Histoplasmosis	0	5	1			
Food intoxication	0	0	0			
Meningitis (type unspecified)	0	5	0			
Diphtheria carrier	0	0	0			
Aseptic meningitis	1	1	0	Polk		
Salmonellosis	22	12	6	Johnson, Woodbury		
Tetanus	0	0	0			
Chancroid	0	0	1			
Encephalitis (type unspecified)	0	1	0			
H. influenza meningitis	0	1	1			
Amebiasis	1	1	7	Boone		
Shigellosis	0	2	0			
Influenza	0	0	0			

New Telephone Number for the
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Woman's Auxiliary News

Serve And Communicate

The Auxiliary plan for progress in 1963-64

Probably every doctor's wife recognizes that we must convince the public of the medical profession's concern for the welfare of the community. Thomas Eliot said, "Between the idea and the reality, between the motion and the act, falls the shadow." Until our knowledge and desires are translated into action, we are nothing.

We shall try, this year, to reinforce the work of each of our service committees by grouping under "community service" those which have to do principally with service for others: Civil Defense, Health Careers, International Health Activities, Mental Health, Rural Health, and Safety. Some committees promote several community service projects; many supplement one another. Special projects—such as homemaker service, physical fitness, programs for the aging, quackery—fit into the work of more than one committee. The pooling of resources can surely make our work easier and more productive.

The committee structure seems to place our work in three categories: 1) technics of operation, 2) orientation and education of our members, and 3) service to others. Although there is no absolute cleavage of functions, if committees work in groups, can we not have a more effective exchange of methods and ideas, avoid the waste of duplicated effort and pinpoint the common value of our separate efforts?

PREPARE THROUGH PROGRAM

This year the national program committee will correlate the work of committees on membership, BULLETIN Circulation, AMA-ERF and Legislation. All are primarily working with our own members, even though some facets of their activities relate to the community.

The prime objective of the Program Committee will be to prepare each member to speak for medicine with knowledge and conviction—to "serve and communicate." The only thing that will bring lasting expansion to our public service and effectiveness is the better education of our own members. Special emphasis will be placed on *specific data*, briefly and concisely presented.

As you serve on your PTA program committee and a co-worker asks you just what the Auxiliary does, can you answer without hesitation?

As you converse with your seatmate on an airplane trip, can you enumerate a half-dozen reasons why the AMA and the Auxiliary oppose medical care for the aged under the Social Security system?

When you sell a ticket for your AMA-ERF benefit, can you answer the buyer's questions about the need to promote the guaranteed loan fund for medical students and to provide unrestricted funds for medical schools?

When a program is needed for the Cub Scout Pack meeting, do you know where to go for aid?

Let's be objective at our meetings, and conscientiously review facts and figures, so that we are ready to transmit sound information.

An important part of our effort is lost if we cannot get good publicity for projects which benefit the public. The greatest stumbling block is lack of know-how, and each member can be more effective if she knows the basic rules. The Program Committee should provide our membership with a working knowledge of publicity methods.

COOPERATIVE EFFORTS

With the above plan for committee grouping, the Program and Community Service Committees will plot together to achieve a balance between member education and public education and service on all pertinent activities. The listing of program aids, organizations with which we work and ideas for communication will be a joint effort. Aggressive and creative planning will be needed, and I believe the resulting evaluation can bring greater dimension to our efforts.

Although the National Auxiliary provides programs and guides for activity and the State Auxiliary promotes and stimulates, it is the county Auxiliary and its members who *act*, thereby becoming the most important element in our SAC program. It is important to know about the entire program of our organization; it is more important, according to community need, to choose carefully, the projects you are actually to carry out. It is far better to do one thing well than to make half-hearted attempts to do much. You speak well when you do well.

Possibly your most important contribution to the Auxiliary will come through your work in church and community organizations, where your knowledge about health problems and programs and your ability to supply authoritative health materials can be invaluable.

SUMMARY

To summarize our hopes for Auxiliary action during the coming year, let's outline our objectives:

Plan for progress: An SAC program in 1963-64.

Theme: *Serve And Communicate*

Method: Conserve effort and consolidate ideas through committee grouping

- A. Operate efficiently
 1. Bylaws
 2. Finance
 3. Publications
 4. Reports
 5. History
 6. Parliamentary procedure
- B. Prepare ourselves to speak for medicine with knowledge and conviction through PROGRAM
 1. Membership
 2. BULLETIN Circulation
 3. AMA-ERF
 4. Legislation
- C. Prove medicine's concern for the welfare of the community through COMMUNITY SERVICE
 1. Civil Defense
 2. Health Careers
 3. International Health Activities
 4. Mental Health
 5. Rural Health
 6. Safety
 7. Special projects

Medicine's story is an exciting one, and it is a privilege to tell it. If we are resolute, we will translate into action our deep concern for the future of medicine in America. The year's success will be assured if we work with "dedicated hearts"—as we have for more than four decades—through the efficient framework of the Auxiliary.

—MRS. C. RODNEY STOLTZ

President—Woman's Auxiliary to
the American Medical Association

Gun Safety

With hunting seasons opening shortly your gun-safety campaign should be underway. "Guns don't kill people, but people with guns do!" This is a shocking but true statement. Gun safety is the new objective of the Auxiliary year 1963-1964. As our leisure time increases and the means of keeping teenagers busy decreases, we need to give some attention to the teaching of gun safety. Through cooperation with school officials, Boy Scouts, etc., let's urge training in safe gun handling for all youngsters. Your local branch of the National Rifle Association will be glad to help.

Essay Contest

The 1963 AAPS Essay Contest for high school students continues with the following choice of topics: "The Advantages of Private Medical Care" or "The Advantages of the American Free Enterprise System Over Communism."

The prizes at the national level total \$2,675.00, with a first prize of \$1,000, second prize \$500, third prize \$250 and eleven other prizes of \$100 and \$75 each.

Now is the time to clear with *your* school for permission to introduce this essay contest. All essays should be submitted at county and state medical society levels, where they will be judged, and the winning papers will be forwarded to the national contest.

Additional information may be obtained at your Auxiliary headquarters office, 529-36th Street, Des Moines 50312.

A sample packaged library kit will be mailed to each county Auxiliary president or essay contest chairman.

Basic Program for Health Careers, 1963-1964

We urgently need "*Electioneers for Health Careers*"!

If you, a doctor's wife, are asked a question by a lay member of a community organization regarding her child's ambition to enter a health career, can you give her a satisfactory answer? Can you tell her of the careers available—from A to Z—"administrator or anesthetist" to "x-ray technician or zoologist"? If you are asked for facts regarding financial aid for those wishing to pursue a health career, are you prepared to answer? Should you be requested by a PTA or school board to present a program on health careers, could you accept?

If your answer to the preceding questions is "No," you are missing some splendid opportunities:

1. To prove medicine's concern for the welfare of the community;
2. To assist our physicians, who stress that the need for personnel in the health sciences is acute;
3. To aid the patients who will benefit from the service which professionally-trained young people will perform;
4. To assist promising young students in deciding on their life's work;
5. To enjoy the genuine satisfaction of participating in a supremely worthwhile undertaking.

Fortunately, it is quite simple to change that answer from "no" to "yes," for there is much information readily available. Brochures, films, guide books, posters, exhibits and packaged programs can be obtained from your Health Careers Committee.

Do plan to put "Recruitment for Health Careers"

on your priority list for 1963-1964. If you have never participated in a *Health Careers Day* in your area, you will find this an interesting and exciting experience. Very few community service projects are as rewarding!

Let the engineers, the nuclear scientists and physicists continue to urge American youth to enter these fields of endeavor. As a Medical Auxiliary, we will "ELECTIONEER FOR A HEALTH CAREER!"

District Meetings

The county Auxiliaries in the eastern one third of the state are scheduled to hold district meetings in October. The meetings scheduled to date are as follows:

District VIII has scheduled a luncheon meeting at the Outing Club in Davenport for October 17. Mrs. J. F. Bishop, of Davenport, the councilor, has arranged the meeting for the counties of Des Moines, Jefferson, Lee, Scott, Henry, Louisa, Muscatine, Van Buren and Washington. All physicians' wives in the district will receive invitations the first of October.

District VII, of which Mrs. C. W. White of Independence is councilor, will meet at the Dubuque Golf and Country Club for a luncheon meeting on October 23. The Dubuque County Auxiliary will be hostess for this meeting, and all physicians' wives in the district will be invited. The Counties in District VII are: Buchanan, Delaware, Dubuque, Linn, Jones, Clinton, Cedar, Jackson, and Johnson.

The dates for meetings in Districts I and VI have not been set, but invitations will be mailed in plenty of time to assure a good attendance.

A district meeting affords not only an opportunity for you to become better acquainted with other physicians' wives in your area, but also an occasion for you to meet and visit with the State Auxiliary officers who will attend.

Governors Cancel Medicare Backing

On July 24, in Miami Beach, a Democratic-controlled committee of the 55 governors' conference acted to cancel its previous endorsement of President Kennedy's program of health care for the elderly under Social Security.

The committee, headed by Governor Richard Hughes, of New Jersey, rephrased a majority report to call for another year's study of the issue.

It struck out language urging speedy congressional action on the proposal to finance such care through Social Security taxes.

Representing the four Republicans on the group, Governor Mark Hatfield, of Oregon, prepared a minority report calling for expansion of the Kerr-Mills program of federal-state aid for needy elderly folk.

Longhouse Residence Is Dedicated

One of the major objectives of the late Dr. Dean H. King, of Spencer, was realized in the dedication of Longhouse Residence on July 20. It is the result of Dr. King's concern for his aging father, who needed facilities which are found only in homes offering special care, and which were then unavailable in Spencer. For this personal reason, and stimulated by the needs of others in the same situation, Dr. King decided to build a home that would serve this purpose. Following Dr. King's request that the residence be a community home, the architectural scheme arranged sleeping and living quarters around a spacious and attractive lobby. The \$300,000 institution is located in the northwest section of the Spencer community, has 26 patient rooms and provides accommodations for 50 persons.

The position of president of the board will be filled by Mrs. Jane King, wife of the late Dr. King. She is a graduate of the State University of Iowa School of Nursing and for the past two years was acting chairman of the County Welfare Board of Clay County. Other board members are Jack Dean King, son of Dr. Dean King; Gerold E. Wilmot, vice-president; and Sandra Sue Wilmot. Dr. Frank D. Edington, a long-time friend of Dr. King, will assume the position of medical director. Mrs. Clayton E. Liggett will act as superintendent of nurses and aides.

Have you moved in the past few months?
PLEASE send any changes of address to 529-36th Street, Des Moines 12. Communication is a necessity: Do help us keep our mailing list up to date. You are our best source of accurate information.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

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JOURNAL

of The

IOWA MEDICAL SOCIETY



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Group Insurance Programs for Members

of the

Iowa Medical Society

WILLIAM O. PURDY, M.D.

Des Moines

THE IOWA MEDICAL SOCIETY'S Committee on Group Insurance has concluded that a series of articles supplying detailed information concerning the different group insurance programs developed for members should be prepared for publication in the JOURNAL.

There were two real and important reasons for establishing the group insurance programs:

1. Insurance coverage can be obtained at more favorable premium rates when purchased on a group basis.

2. The plan and type of coverage particularly suited to the needs and desires of the group can be developed and underwritten.

These plans have been in force for a number of years, but it is felt that discussions of the benefits available will be helpful and welcome to long-time as well as to new members. The Committee believes that many physicians may not have been aware of the benefits available to them, and when thus informed, they may want to enroll in the various programs as soon as an opportunity presents itself.

This, the first of this series of articles, will deal with the state-wide Blue Cross-Blue Shield plan for IMS members and their dependents.

In 1958, the Committee on Group Insurance was instructed by the IMS House of Delegates to investigate the feasibility of establishing a statewide health insurance plan for members of the Society. In compliance with that directive, the Committee conducted an intensive study, and prepared and presented its recommendations to the Society at its 1959 annual meeting.

Before making a recommendation, the Committee reviewed programs which were in effect, at

that time, for the various county medical societies, clinics, individual groups and others. It found that there were 83 different doctor groups enrolled in Blue Cross, in the state, and that 25 of them had no Blue Shield coverage. The various ones of these groups had 16 different types of contracts. Most of the groups were very small, and the Committee felt that the coverage provided them was quite inadequate, particularly for major illnesses. Most groups had hospitalization coverage that provided for the payment of hospital bills for a period of 70 days, but in some instances only for 30 days. Coverage for nervous and mental illnesses was limited to 30 days, and coverage for a son or daughter terminated when the child reached 19 years of age.

After studying the various plans then in existence, and after many conferences with various physicians for the purpose of getting new ideas, the Committee proceeded to develop a program that it felt would meet the desires of most doctors, though it knew full well that it could not devise one that would please everyone. Its plan embodied the following major considerations:

1. Maximum benefits for the premium dollar
2. Emphasis on coverage for major and costly illnesses, rather than benefits for minor and less-costly ones
3. Full coverage for mental and nervous illnesses, and for tuberculosis
4. A fixed-dollar maximum allowance for room service
5. Coverage throughout the lifetime of the member, as long as he or she maintains membership in the Society and pays the required premiums
6. Assurance that the widow of a covered member may continue coverage with the group
7. Coverage for each dependent child from birth to 19 years of age or until marriage, and continued coverage after 19 years of age, or to age 23, if he or she is single and a student in college
8. Hospital coverage for a single illness for a period of 365 days.

To secure a contract embodying these considerations, and with a reasonable premium rate, it was necessary to employ deductibles. It was decided to

Dr. Purdy, the chairman of the IMS Committee on Group Insurance, is medical director of the Equitable Life Insurance Company of Iowa.

use a deductible of \$100 or \$200 on the Blue Cross contracts, and a deductible of \$50 or \$100 on the Blue Shield contracts, and to permit each member to select whichever contract he wished. With deductibles of these sizes, many small claims will not qualify. Thus the insurer will be spared not only the cost of the medical or hospital services in minor illnesses or injuries, but also the cost of a considerable share of the usual claim-processing. In consequence, greater coverage can be provided for the more serious and costly illnesses, and at a very reasonable premium rate.

Many physicians expressed a desire for this type of contract, saying that they were not concerned about coverage for small bills, but were most anxious for a policy that would provide benefits for major difficulties such as those occasioned by mental and nervous illnesses, serious injuries and other disorders requiring long periods of hospitalization. They wished to have their dependent, unmarried children covered past age 19 if attending college, in order to avoid the necessity of buying a separate policy for each child.

It should be pointed out that most group plans are experience-rated, and that if the premium paid is insufficient to pay the claims plus the administrative costs, the premium must be raised. Money does not flow from heaven into the treasury of the insurance carrier, but comes only from the premium payments of the insured and the investment earnings of reserve funds. It is axiomatic that the larger and more homogeneous the group, the less fluctuation there will be in the premium rate.

The insurance principle still isn't well understood by many people, particularly as it relates to medical and hospital coverages. Some people still have the idea that they somehow have been abused if the money they have paid out in health-insurance premiums isn't repaid to them or expended in their behalf, in amounts that are at least equal to their premiums. On the contrary, the fortunate man is the one who has adequate coverage but never has to use it! No sensible person burns the roof over his head just in order to collect from the fire insurance company to which he has been paying premiums for many years. Yet it sometimes is difficult to get people to think of insurance coverage for medical expense in the same light.

BENEFITS IN THE IMS BLUE CROSS-BLUE SHIELD POLICIES

At the present time, 825 IMS members are enrolled in the statewide Blue Cross-Blue Shield Group. The program provides the following benefits:

In a Blue Cross member hospital. When a subscriber or an eligible member of a subscriber's family is a bed patient in a Blue Cross member hospital, for an illness occasioned by anything other than alcoholism or drug addiction, he or she will receive the following benefits paid-in-full for 365 days:

An allowance of up to \$25 per day on room charges
Use of operating room
Anesthetic materials furnished by the hospital
Administration of anesthesia by a salaried hospital employee
Surgical dressings, casts and splints
Approved drugs and medicines
Transfusion service (not including blood or plasma)
Basal metabolism tests (when consistent with diagnosis)
Electrocardiograms (when consistent with diagnosis)
Physical therapy
Oxygen therapy
Maternity care, including delivery room and care of newborn
Diagnostic x-ray and pathology services (provided by Blue Shield).

Coverage in cases of alcoholism or drug addiction is limited to 30 days. In addition, if three months elapse between the date of the patient's discharge from the hospital and the date of his readmission, he is again eligible for 365 days of benefits.

In hospitals that are not members of a Blue Cross plan. In non-member institutions, there is an allowance of \$25 per day on room charges, plus up to \$200 in extra services, as listed above, for 365 days.

DEDUCTIBLE OPTIONS

The above benefits are subject to \$100 deductible per admission, or \$200 deductible per admission, depending upon which contract the subscriber selects.

BLUE SHIELD-BLUE CHIP COVERAGE

Under Blue Shield-Blue Chip coverage, there is a limit of \$5,000 per illness or accident, and the policies are \$50 deductible or \$100 deductible. After the first \$50 or \$100, the following benefits will be paid in full, provided that the services have been rendered by a participating physician, and provided that the charges are usual, customary and reasonable in the community:

Surgical services
Accident care
Radium treatment or x-ray therapy
Anesthesia
Maternity, including postnatal and prenatal care
In-hospital medical services, including
Intensive medical care
Consultation services
Concurrent services

As previously indicated, this is an experience-rated group plan, and the premium rate is determined once each year for the ensuing 12-month period. The rate is either raised or lowered, depending upon the claim experience in the preceding year. At present, the following rates are in effect for the various plans:

BLUE CROSS WITH BLUE SHIELD X-RAY AND LAB.

	Single	Two-Person	Family
	Per Month		
Blue Cross \$100 Deductible . .	\$4.60	\$10.35	\$10.35
Blue Cross \$200 Deductible . . .	3.15	7.20	7.20

BLUE CROSS WITH BLUE SHIELD-BLUE CHIP

Blue Cross \$100 Deductible			
Blue Chip \$50 Deductible	5.75	12.75	14.25
Blue Cross \$100 Deductible			
Blue Chip \$100 Deductible . . .	5.65	12.30	13.40
Blue Cross \$200 Deductible			
Blue Chip \$50 Deductible	4.35	9.75	11.25
Blue Cross \$200 Deductible			
Blue Chip \$100 Deductible . . .	4.25	9.25	10.35

HOW TO ENROLL

Here are the methods of enrolling in the statewide physicians' group:

1. A physician may enroll without underwriting within 90 days after his admission to IMS membership; physicians applying at times other than during the regular open-enrollment period will be considered subject to regular underwriting requirements. This means that applicants sign an application containing a provision for an 11-month

waiting period before benefits can be paid for pre-existing conditions. More detailed information relating to this matter can be obtained from the Blue Cross-Blue Shield office.

2. Physicians enrolled in a local county medical society group may transfer to the statewide program at a time other than the open-enrollment period, provided that at least 75 per cent of those then enrolled in the local county group transfer to the state group.

3. All physician members of the IMS are eligible for enrollment during the once-a-year open-enrollment period. This year the open-enrollment will begin during November and will close on December 1, with coverage becoming effective January 1, 1964.

All IMS members will soon receive information regarding the open-enrollment period and regarding a change in the premium rate if any has been found necessary.

The Committee on Group Insurance has been pleased with the past experience with this program. There has been little change in the premium rate since this group was established three years ago. In view of general increases in cost which have been taking place, one would expect an upward adjustment of the premium rate, unless the group has an extraordinary claim experience.

The Committee recommends this program to all members who have not already joined.

Civil Defense News Notes

The U. S. House of Representatives recently approved the new Civil Defense Bill, H.R.8200, which would authorize the expenditure of \$15,600,000 to provide a million shelter spaces in federal buildings, and \$175,000,000 for ten million spaces in non-profit institutions such as schools, hospitals, welfare organizations, and state and local government structures.

The definition of "civil defense" is also broadened, under the Bill, to include those activities designed to minimize the effects upon the civilian population of a "flood, drought, fire, hurricane, earthquake, storm or other catastrophe," as well as from the effects of an enemy attack.

The Iowa Medical Society and like organizations are being asked to change the names of their instrumentalities that are now called "Committee on National Emergency Medical Service," "Civil Defense Committee," etc., and instead to call them "Committee on Disaster Medical Service" or something else that will be indicative of their responsibility in community emergencies.

Although state Civil Defense headquarters has emphasized repeatedly that property records must be maintained for, and CD insignia attached to, all matching-funds equipment, audit reports continue to show that, in some instances, these safe-

guards are not being handled properly. State officials point out that the maintenance of equipment records is a "must" procedure not only as a matter of good business but also to insure an orderly changeover in the event of a change in personnel at the local administrative level. The CD insignia are very necessary in cases where identical items have been bought both with and without federal Civil Defense financial assistance.

The General Federation of Women's Clubs, the National Federation of Business and Professional Women's Clubs, and the American Legion Auxiliary are distributing civil defense information kits to their local unit leaders. Provided by the Departments of Defense and Civilian Defense, the kits contain basic information for an organized action program by local groups to support Civil Defense in the community.

"Conelrad" was replaced by "Emergency Broadcasting System" on August 5, 1963. Ultramodern navigational methods have made "Conelrad" obsolete. Under it, about 1,200 radio stations holding national defense emergency authorizations would have broadcast on either 640 or 1240 megacycles without giving a hint as to the locations of the individual stations. Under the new plan, authorized stations will stay on the air at their accustomed frequencies during an attack.

Coming Meetings

IN STATE

- Oct. 4 Iowa Tuberculosis and Health Association, Hotel Fort Des Moines, Des Moines.
- Oct. 4-5 6th Annual Rehabilitation Seminar for Physical Therapists, S.U.I. College of Medicine, Iowa City.
- Oct. 11 Current Problems in Diagnostic and Therapeutic Urology, S.U.I. College of Medicine, Iowa City.
- Oct. 18 Arthritis and Related Disorders, S.U.I. College of Medicine, Iowa City.
- Oct. 24 Northeast Iowa Clinical Conference, Clayton House, 300 W. Mullan, Waterloo.
- Oct. 26 Mercy Hospital Medical Day, Mercy Hospital, Des Moines
- Nov. 6-7 Nursing Institute on Labor and Delivery Room Problems. S.U.I., Iowa City.

CONTINENTAL U. S.

- Oct. 3-4 The Eye of Physical Diagnosis, University of Kansas Medical Center, Kansas City, Kansas.
- Oct. 5-10 American Academy of Pediatrics, Palmer House, Chicago.
- Oct. 5-11 Annual Otolaryngologic Assembly (University of Illinois College of Medicine and the Illinois Eye and Ear Infirmary), Chicago.
- Oct. 7-9 American Electroencephalographic Society, Jack Tar Hotel, San Francisco.
- Oct. 7-11 Recent Advances in Basic Mechanisms in Internal Medicine, University of Michigan Medical Center, Ann Arbor.
- Oct. 8-12 Congress of Neurological Surgeons, Denver-Hilton Hotel, Denver.
- Oct. 9-11 Aviation Medicine, University of Kansas School of Medicine, Kansas City.
- Oct. 10-12 Ninth National Conference on Physicians and Schools, Conrad Hilton Hotel, Chicago.
- Oct. 10-13 American Society of Clinical Hypnosis, Jack Tar Hotel, San Francisco.
- Oct. 10-13 American Society of Maxillofacial Surgeons, Sheraton-Park Hotel, Washington, D. C.
- Oct. 12-13 Mid-West Allergy Forum, Sheraton-Cleveland Hotel, Cleveland.
- Oct. 13-18 International Congress of Plastic Surgery, Sheraton-Park Hotel, Washington, D. C.
- Oct. 14-18 Recent Advances in the Diagnosis and Treatment of Disease of the Heart and Lungs, International Inn, Washington, D. C.
- Oct. 15-17 Indiana State Medical Association, Murat Temple, Indianapolis.
- Oct. 17 School Health, University of Kansas School of Medicine, Kansas City.
- Oct. 17-19 Central Neuropsychiatric Association, Sheraton-Lincoln Hotel, Houston.
- Oct. 17-20 Academy of Psychosomatic Medicine, Sheraton-Palace Hotel, San Francisco.
- Oct. 19-23 National Medical Foundation for Eye Care, New York City.
- Oct. 20 American Rhinologic Society, Americana Hotel, New York.
- Oct. 20-23 American College of Gastroenterology, The Shoreham Hotel, Washington, D. C.
- Oct. 20-25 American Academy of Ophthalmology and Otolaryngology, New York Hilton Hotel, New York City.
- Oct. 21-22 American Cancer Society, Biltmore Hotel, New York City.
- Oct. 21-24 Interstate Postgraduate Medical Association of North America, Palmer House, Chicago.
- Oct. 21-25 Common Problems in Endocrinology and Metabolism: Basic Concepts and Clinical Application, Marquette University School of Medicine, Milwaukee.
- Oct. 21-25 Clinical Cardiopulmonary Physiology, Pick Congress Hotel, Chicago.
- Oct. 22-24 Fractures in General Practice, Medical College of Georgia, Augusta.
- Oct. 22-26 Society for Clinical and Experimental Hypnosis, Barbizon Plaza Hotel, New York City.
- Oct. 23-25 Chiefs-of-Staff Conference, University of Colorado Medical Center, Denver.
- Oct. 24-26 American Association for the Surgery of Trauma, Mark Hopkins Hotel, San Francisco.

- Oct. 24-26 American College of Obstetricians and Gynecologists (District 5), Detroit Statler Hotel, Detroit.
- Oct. 25-26 National Congress on Medical Quackery, Sheraton-Park Hotel, Washington, D. C.
- Oct. 25-29 American Heart Association, Biltmore Hotel, Los Angeles.
- Oct. 28-30 Obstetrics & Gynecology, University of Kansas School of Medicine, Kansas City.
- Oct. 28-31 31st Annual Assembly of the Omaha Mid-West Clinical Society, Civic Auditorium, Omaha.
- Oct. 28-Nov. 1 American College of Surgeons, Fairmont and Mark Hopkins Hotel, San Francisco.
- Oct. 28-Nov. 1 Allergy and Hypersensitivity States, Northwestern University Medical School, Chicago.
- Nov. 1-2 Central Society of Clinical Research, Drake Hotel, Chicago.
- Nov. 2-3 14th National County Medical Societies Conference on Disaster Medical Care, Pick-Congress Hotel, Chicago.
- Nov. 2-6 American Orthotics and Prosthetics Association, Jung Hotel, New Orleans.
- Nov. 2-6 American Society of Anesthesiologists, Palmer House, Chicago.
- Nov. 5-8 American Association of Blood Banks, Statler-Hilton Hotel, Detroit
- Nov. 6-7 A. Morris Ginsberg Memorial Seminar in Neurology (University of Kansas School of Medicine), Menorah Medical Center, Kansas City, Missouri.
- Nov. 7-9 American Society of Cytology, Neil House, Columbus, Ohio.
- Nov. 7-10 Gerontological Society, Sheraton Plaza Hotel, Boston.
- Nov. 10-15 American Fracture Association, Americana Hotel, Bal Harbour, Florida.
- Nov. 11-15 American College of Preventive Medicine, Continental Hotel and Municipal Auditorium, Kansas City, Missouri.
- Nov. 11-15 American Public Health Association, Municipal Auditorium, Kansas City, Missouri.
- Nov. 11-15 Recent Advances in the Diagnosis and Treatment of Diseases of the Heart and Lungs (American College of Chest Physicians), Barbizon Plaza Hotel, New York City.
- Nov. 15 Seventh Annual Symposium on Diabetes, Presbyterian-St. Lukes Hospital, Chicago.
- Nov. 17-22 Radiological Society of North America, Palmer House, Chicago.
- Nov. 18-20 Aging of the Lung: Perspectives, Tenth Hahnemann Symposium, Hahnemann Medical College and Hospital, Sheraton Hotel, Philadelphia.
- Nov. 18-21 Southern Medical Association, New Orleans.
- Nov. 21-23 Sectional Meeting of the American College of Physicians, Detroit.
- Nov. 30-Dec. 1 Interim Session, American College of Chest Physicians, Portland.
- Nov. 30-Dec. 5 American Academy of Dermatology, Palmer House, Chicago.

ABROAD

- Oct. 6-11 International Congress of Clinical Pathology, Mexico City. Write: E. Cervera, M.D., Durango 213, Mexico 7, D.F.
- Oct. 22-28 Meeting on Prevention and Treatment of Psychosomatic Disorders, Geneva. Info: World Health Organization, Palais des Nations, Geneva.
- Nov. 5-13 Ninth Congress of the Pan-Pacific Surgical Association, Honolulu. Write: F. J. Pinkerton, M.D., Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13, Hawaii
- Nov. 8-10 International Conference on Tetanus, Bombay. Info: J. C. Patel, M.D., KEH Hospital, Parel, Bombay 12.
- Nov. 13-Dec. 10 First Pan-Pacific Mobile Educational Lecture Seminar, New Zealand, Australia, Thailand, the Philippines, Hong Kong and Japan. Write Dr. F. J. Pinkerton, Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13

Scientific Articles

The Dizzy Patient

R. HINCHCLIFFE, M.D.
London, England

PATIENTS HAVE USED the term *dizziness* to describe not only sensations of movement but also sensations of faintness, lightheadedness, unreality and swimming-in-the-head. Thus, the symptom may arise not only from disorders of the vestibular system but also from conditions as diverse as vasomotor syncope, endogenous depression, the phobic anxiety-depersonalization syndrome and hypoglycemia.¹ For our purposes, however, we should regard *dizziness* as signifying a hallucination of movement, when correctly used, and as being synonymous with the terms *giddiness* and *vertigo*. When the definition is thus restricted, this word signifies an imbalance equatable with a deranged vestibular system.³⁶ Note that we are not restricting the interpretation of the symptom to sensations of rotatory movement. The sensations of movement may be non-rotatory, e.g., swaying sensations, or they may consist of the impression that objects within the field of vision are jumping about from side to side or up and down (oscillopsia).³

By the time we have reached 65 years of age, over 30 per cent of us have had one or more episodes of vertigo.¹⁴ The percentage of people who have experienced vertigo increases with age. Admittedly, using this definition we must grant that the majority of the vertiginous attacks which these people have experienced have been fleeting and few. Droller and Pemberton⁸ have shown that, in elderly people at least, the prevalence of vertigo in

During the 1962-1963 academic year, Dr. Hinchcliffe was a research associate professor of otolaryngology and maxillo-facial surgery at the S.U.I. College of Medicine. He is now on the staff of the Institute of Laryngology and Otology at the University of London. This paper is based on a lecture he gave during a postgraduate course on otolaryngology in Iowa City. The study was supported by USPHS Grant B-2779.

the general population is correlated with the prevalence of arteriosclerosis.

Table 1 provides another index of how common vertigo is. It shows the prevalence of vertigo and other disorders of comparable frequency in a large number of general practices. Note that vertigo is far more common than either rheumatoid arthritis or appendicitis.²⁰

Table 2 lists the causes in a series of 60 consecutive cases of vertigo that I have seen at the State University of Iowa. Let us say a few words about each of them in turn.

CAUSES OF VERTIGO

1. MÉNIÈRE'S DISEASE

Ménière's disease was by far the commonest cause of vertigo in the S.U.I. series, and the figures

TABLE 1

Condition	Prevalence
Duodenal Ulcer	5.9 per 1,000
Pneumonia	5.8 per 1,000
Vertigo	5.0 per 1,000
Rheumatoid Arthritis	4.8 per 1,000
Appendicitis	4.0 per 1,000

The prevalence is expressed in terms of patient-consulting rate per 1,000 population (after Logan and Cushion, 1958).

TABLE 2

CAUSES OF 60 CONSECUTIVE CASES OF VERTIGO

Ménière's Disease	30%
Vertebro-Basilar Artery Insufficiency ..	18%
Vestibular Neuritis	7%
Epilepsy	5%
Streptomycin Intoxication	5%
Other Causes	35%

for that group agree with those reported by other investigators in the United States,³⁷ in Canada²² and in the United Kingdom.⁵ Ménière's disease is characterized by recurrent attacks of sustained vertigo associated with nausea and, perhaps, vomiting, but with no loss of consciousness. The attacks show a phasic characteristic. In other words, they tend to occur in groups. The attacks may be as short as a minute or two, or may last as long as an hour or two. The attacks are frequently associated with a pressure or "fullness" sensation in the ears. This helps to localize the dysfunction of the vestibular system to the inner ear. Ménière himself²⁴ emphasized that besides being accompanied by no loss of consciousness, the episodes were associated with no amnesia. The patient could vividly remember everything else that was going on at the time when the episode of dizziness occurred. Moreover, there was no biting of the tongue or paralysis of the limbs either in association with the episode, or following it. Note that I have not yet mentioned any auditory symptoms in conjunction with Ménière's disease. Although, as is frequently pointed out, Ménière's disease is characterized by recurrent attacks of dizziness, tinnitus and deafness, this triad occurs only in the fully developed, or severer, cases. Therefore, I wish to stress that, in Ménière's disease, as we have defined it, sustained attacks of dizziness may be the sole manifestation of the condition. There may be no auditory symptoms. Auditory symptoms, tinnitus or deafness may occur later, or not at all, if the case is a mild one. When deafness does occur in Ménière's disease, it is characterized not only by a progressive, but also by a fluctuant, perceptive low-tone deafness, which is usually unilateral. There is also a distortion of sounds. We asked the patient, "Do loud sounds grate upon you?" and asked, "Is there a change in the quality of music?" The distortion and the deafness, when deafness is present, frequently show exacerbations with attacks of dizziness, as does the tinnitus when it also is present.

When we have ascertained that there has been no loss of consciousness with the attacks of dizziness, the next question is, "Do you wish that you might lose consciousness?" Invariably the answer is "Yes"—an indication of the severity of the symptom.

Note that too much emphasis has been placed upon special examinations in the diagnosis of Ménière's disease. These special tests, such as audiometry, tuning-fork and vestibular-function tests may lead to confusion, as Crowe⁶ pointed out nearly a quarter of a century ago. The diagnosis of the condition does *not* depend upon the demonstration of impaired hearing or abnormal vestibular responses to caloric tests. The diagnosis depends primarily upon the history.

2. VERTEBRO-BASILAR ARTERIAL INSUFFICIENCY

Vertebro-basilar arterial insufficiency, you will note, is the second commonest cause of vertigo, and certainly is the most prevalent cause of vertigo in older people who present to a doctor. This syndrome is of relatively recent recognition, having been first described in 1955 by Millikan and Siekert²⁵ at the Mayo Clinic. In elderly people, the fully developed clinical picture is that of periodic attacks of transient vertigo, perhaps associated with hemipareses, which involve first one side of the body and then the other, blurring of vision, diplopia, slurred speech and paresthesias of the face or extremities, which may occur singly or combined. These are the periodic transient cerebral symptoms that were previously attributed to cerebral vasospasm, since Peabody²⁷ described his case of transitory attacks of hemiplegia in 1891.

Vertigo occurs in about half the cases of vertebro-basilar arterial insufficiency, and it may be the presenting symptom. Indeed Siekert and Millikan²⁵ assert that vertigo is probably the most frequent single symptom of intermittent vertebro-basilar arterial insufficiency. The reason why vertigo is the initial or single symptom in this vertebro-basilar artery insufficiency is that the vertigo is due in this case to dysfunction of the vestibular centers in the brain stem. The vestibular nuclei are supplied by an end artery that is a branch of the posterior inferior cerebellar artery which comes off the vertebral artery. Because of this end-arterial supply, the weak point in the vertebro-basilar arterial field of supply is the vestibular center in the brain stem. Many cases of vertigo due to this condition may previously have been diagnosed as cases of labyrinthine ischemia. Here, in addition to the vestibular symptoms, there is said to be a bilateral high-tone hearing loss that may be indistinguishable from presbycusis. In view of the age of these people, it is almost certain that this is a coexistent presbycusis.

Between attacks, the neurological examinations of patients with vertebro-basilar artery insufficiency are usually normal. The instances in which there are minor residual neurologic signs are due to permanent damage to the brain, presumably from thrombosis with infarctions. The neurologic deficits are not due to the episodic ischemia alone. It has been noted that since the prime patho-physiologic lesion is an ischemia of the vestibular nuclei in the brain stem, these might perhaps be more correctly referred to as cases of vestibular ischemia rather than labyrinthine ischemia. This terminology would be preferable, since labyrinthine ischemia has been regarded as the basic patho-physiologic mechanism in Ménière's disease.

In discussing vertebro-basilar insufficiency, Marshall²³ reported a strong clinical impression that the incidence of complications after vertebral angiography in cases of cerebral vascular disease

are not inconsiderable. Moreover, at the present time, no surgical treatment for the condition is of proven value. It would, therefore, seem inadvisable to attempt to confirm the diagnosis by vertebral angiography, especially as the clinical picture is distinct.

Siekert and his colleagues³⁴ have shown that anticoagulant therapy is associated with a reduction in the risk of cerebral infarction in patients with *intermittent* cerebrovascular insufficiency, including the syndrome of intermittent vertebrobasilar arterial insufficiency.

3. VESTIBULAR NEURITIS OR VESTIBULAR NEURONITIS

Vestibular neuronitis was the name given by Hallpike,¹² in 1949, to a condition characterized by vertigo but without auditory symptoms, presenting an abnormal response to the caloric test and having a toxi-infectious etiology. In 1952, Dix and Hallpike⁷ stated that the vertigo was usually, but not always, paroxysmal in character. However acute forms, with single episodes of vestibular failure, frequently occur. By acute vestibular failure we mean severe, sustained vertigo of sudden onset, associated with nausea and vomiting, and lasting a few days before gradually trailing off over a few months or a few weeks. Dix and Hallpike⁷ considered vestibular neuronitis to be an organic disease confined to the vestibular apparatus, and localized, in all probability, to the peripheral nervous pathway up to and including the vestibular nucleus in the brain stem. They considered that the lesion was peripheral to the labyrinth, for they asserted that destructive lesions of the vestibular labyrinth, whatever their pathology, tend to involve the cochlear apparatus.

Pfaltz,²⁹ who reviewed a number of these cases in 1955, considered that the condition was due to an inflammatory-toxi-allergic condition analogous to retrobulbar neuritis. He found maxillary sinusitis in half of these cases, and Dix and Hallpike⁷ found maxillary sinusitis in one-third of their cases. Pfaltz²⁹ emphasized that besides exhibiting no auditory symptoms, the cases of what we might term chronic vestibular neuronitis are distinguishable from the classical Ménière's disease by a type of dizziness which he termed *Schwankschwindel*, i.e., a swaying sensation, as opposed to *Drehschwindel*, the rotatory vertigo which people sometimes call the whirling vertigo and which characterizes classical Ménière's disease.

The fact that we have a sinusitis in association with vertigo does not necessarily imply that the condition is a vestibular neuronitis. For example, I recently saw a patient with a five-month history of vertigo in association with frontal headaches. In this case, the dizziness consisted of recurrent episodes of rotatory vertigo and an associated fullness of the ears which are characteristic of Ménière's disease. The frontal headaches were attributable to an infected antrum. Both the head-

ache and the vertigo cleared with antral puncture and vasodilator-antihistaminic-antibiotic therapy.

Numerous infective foci have been incriminated as the cause of vestibular neuronitis, specifically, and of toxic vertigo in general. The inflammatory site may occur not only in the sinuses, but also in the tonsils,^{7, 21, 38} the teeth and adnexa,^{7, 13, 21, 38} the gallbladder,^{10, 21, 22, 38} the liver,^{10, 29} the gastrointestinal tract,²⁹ the kidney,²⁹ the joints,²¹ the prostate,²¹ the uterus³⁸ and the uterine tubes.²⁹ Excessive consumption of, or sensitivity to, tobacco²¹ and tea³² may also be a factor in the causation of vertigo. We should therefore bear these facts in mind when a patient confronts us complaining of a recurrent vertigo that has no obvious cause. Although the presence of a raised blood sedimentation rate would suggest vertigo due to a toxi-infectious etiology, the presence of a raised rate is not essential to such a diagnosis. The sedimentation rate is frequently normal in cases of vestibular neuronitis which have been shown to be due to an infection in the paranasal sinuses. Moreover, a complete symptom review and a careful general physical examination may not disclose a latent inflammatory condition in a particular organ. Radiologic examination may show evidence for sinusitis when the rhinoscopic examination shows no abnormality. The bacterial pyrogen test²⁸ may indicate the existence of chronic pyelonephritis when other examinations are not informative.¹⁵ In fact the test is of greatest value in precisely those cases where the urine is apparently normal.¹⁷ It is also known that gallstones and cholecystitis may be asymptomatic.³¹ For this reason, an infective focus in the gallbladder cannot be excluded unless a straight x-ray of the abdomen and cholecystography have been performed. It is also well known that prostatitis may exist without any symptoms whatsoever, and a rectal examination may be uninformative.²⁶ Consequently the diagnosis of chronic prostatitis can be accurately made only by the microscopic examination of expressed prostatic secretion for the presence of polymorphonuclear leucocytes. The most sensitive test for chronic prostatitis is Oates' so-called "five-slide test."²⁶

4. EPILEPSY

Vertiginous epilepsy was the fourth commonest cause of vertigo in the above-mentioned series. Admittedly, it was the cause in only about five per cent of cases, but it is obviously an important cause. Vertiginous epilepsy, sometimes called vestibular seizures, must be differentiated from vertigo. Gowers reported that it occurred in 16 per cent of epilepsies, although Symonds³⁶ considers that a somewhat inflated percentage. It has also to be differentiated from a reflex epilepsy which may occur as a result of vestibular stimulation. The history is that of recurrent but brief attacks of vertigo, and there may be momentary amnesia

associated with the vertigo. There may be no loss of consciousness. Hence epilepsy may not be suspected. Neurologic, otologic and audiologic examinations show no abnormality. An examination of vestibular function is also invariably normal. However, if the epilepsy is secondary to a space-occupying lesion, there may be focal cerebral signs. The diagnosis depends on electroencephalography.

5. STREPTOMYCIN INTOXICATION

With the widespread use of streptomycin for pulmonary tuberculosis and renal disease, streptomycin intoxication is not infrequently seen by the neuro-otologist. The history goes something like this: The patient is hospitalized and starts his injections of streptomycin. Within a few days, he complains of difficulty in focusing, or he says that things are blurred. Someone looks in his eyes with an ophthalmoscope and notices no abnormality, and the patient's complaints are ignored. On getting out of bed several weeks or months later, the patient has difficulty in walking and we say, "Well, since you have been in bed all this time, what can you expect?" The ataxia persists, and when someone does a caloric test, there is no response. Note that the patient does not usually say he is dizzy, even though he has suffered vestibular damage from streptomycin. The patient sees his surroundings as either blurred or dancing, partly because of an impairment of the vestibulo-ocular reflexes that retard the rate of movement of images across the retina enough to prevent head movements from seriously blurring the usual image. It is also partly due to the neuro-muscular blocking action that streptomycin² exerts upon the oculomotor nerves.¹⁹ Otoscopic findings are of course normal, and the audiogram is usually normal unless (a) there is a preexisting hearing defect, (b) there is coexisting renal disease or (c) there has been a coadministration of dihydrostreptomycin. The last patient whom I saw—a young girl who had had a deafness attributed to streptomycin—had also been given dihydrostreptomycin. This is important to remember, for it has been said that if the hearing is normal, there can have been no streptomycin intoxication. This is not true.

6. ACOUSTIC NEUROMA

I mention acoustic neuroma despite the fact that it is not a very common cause of vertigo. It is an important one, however, not only because of the seriousness of the condition but also because it is often incorrectly diagnosed. In one recent series of 34 cases, in fact, 27 were incorrectly diagnosed—nearly 80 per cent! Contrary to many doctors' impressions, acoustic neuroma patients *do not* say that they are giddy or dizzy. They usually present with one of two complaints. First and most commonly, they complain of a progressive, non-fluctuant, unilateral deafness³⁰ which proves to be of

the perceptive (sensorineural or medio-tympanic) type, and second, they complain of progressive unsteadiness in walking. It has been said that the audiogram may be normal in five per cent of cases.¹⁶ Judging from other available data, normal audiograms probably occur in about three per cent of cases.

Spontaneous nystagmus occurs in 92 per cent of cases.⁹ This is a coarse nystagmus on gaze directed to the side of the lesion, and a fine rapid nystagmus on gaze to the normal side. Therefore it is a gaze nystagmus and not a vestibular nystagmus. The nystagmus is probably due to compression of the brain stem and cerebellum. The corneal reflex is absent or depressed on the side of the lesion in 87 per cent of cases.⁹ This is due to pressure on the mesencephalic root of the trigeminal nerve.¹¹ Ataxia occurs in 79 per cent of cases.⁹

In all cases of acoustic neuroma, there are abnormal responses to the bithermal caloric test. In the series of cases at the Institute of Neurology, in London, the protein in the cerebrospinal fluid was raised in 100 per cent of cases.¹⁸ Cases of acoustic neuroma have, however been reported with normal cerebrospinal fluids.

INVESTIGATION OF THE DIZZY PATIENT

A schema for investigation of the dizzy patient is shown in Table 3. The anamnesis is probably the most important single factor. If one does not have some idea of the diagnosis of the disorder before he has finished taking the history, it is unlikely that he will be able to make a diagnosis after the physical examination.

Otoscopic examination of the ear, nose and throat is undertaken primarily with a view to ascertaining whether there is a perforation in the eardrum which might indicate a chronic suppurative otitis media causing a circumscribed labyrinthitis, or whether there is other evidence of middle ear infection that may be responsible for an acute labyrinthitis. Examination of the nose and throat is not very informative in the investigation of vertigo, except in so far as it may point to a focus of infection that is responsible for a toxi-infectious vertigo. Tuning-fork tests of hearing may reveal a low-tone sensorineural hearing loss that is indicative of endolymphatic hydrops, or a conductive hearing loss that is indicative either of chronic middle-ear disease or of otosclerosis. Ménière's disease may be secondary to otosclerosis. Examination of gait and station is not a valid test of vestibular dysfunction since other factors are also involved, including factors outside the nervous system such as those determined by the condition of the skeletomuscular system. Impairment of gait and station due to a vestibular disorder is, however, some index of the severity of the derangement of vestibular function.

The majority of vestibular disorders do not show spontaneous nystagmus. However when spon-

TABLE 3
INVESTIGATION OF VERTIGO

A. Anamnesis
B. Clinical Examination
(1) ENT
(2) Tuning-Fork Tests of Hearing
(3) Vestibular System
(a) Gait and Station
(b) Spontaneous Nystagmus
(c) Positional Test for Nystagmus
(d) Optokinetic Nystagmus
(e) Caloric Tests
(f) Galvanic Tests
(g) Fistula Test
(4) Nervous System—Cranial Nerves (Cerebellar Function if Spontaneous or Positional Nystagmus)
(5) Cardiovascular System
C. Audiometry
(1) Individual Pure Tone Audiograms
(2) Békésy Audiogram
D. Blood
(1) Hb
(2) Smear
(3) Sedimentation Rate
E. X-Rays
(1) Temporal Bones—IAMs; Mastoids
(2) Paranasal Sinuses
(3) Cervical Spine
(4) Chest
F. Psychologic Appraisal: MMPI
G. EEG
H. Lumbar Puncture

taneous nystagmus is present, its character may indicate whether we are dealing with a central or with a peripheral lesion. The positional test for nystagmus is of value not only in indicating an organic basis for a person's symptoms (a positional nystagmus may be the only abnormal physical finding, especially in post-traumatic vertigo), but it is also of help in the differential diagnosis. Directional preponderance of optokinetic nystagmus indicates a hemisphere lesion to the side of the directional preponderance.

Caloric tests of vestibular function are of value primarily in indicating whether vestibular paresis does or does not exist. If there is no response to the caloric test, the galvanic test will indicate whether the site of the lesion in the vestibular pathway lies in the inner ear or more centrally. A normal galvanic threshold occurs with lesions of the vestibular neuroepithelium, provided that the vestibular nerve is intact. A fistula test is appropriate, with the examiner using a pneumatic otoscope or exerting alternating pressure with his index finger upon the patient's tragus, whenever otoscopic examination indicates a perforated tympanic membrane. If an alternating pressure

stimulus is applied to the external acoustic meatus of the involved ear and a nystagmus is induced, then circumscribed labyrinthitis must exist.

Since the vestibular system is a component part of the nervous system, a neurologic examination should also be performed in cases of dizziness. However, the likelihood of a neurologic condition causative of vertigo, which condition is also productive of neurologic signs other than those due to cranial-nerve involvement, is small. Consequently, an examination of the nervous system may be restricted to examination of the other cranial nerves. Examination of the cardiovascular system should be performed primarily in order to ascertain the extent to which arteriosclerosis is present.

A low-tone sensorineural threshold shift may be indicated by a pure-tone audiogram, when it cannot be detected by tuning-fork tests. Consequently, audiometry is of value in the diagnosis of early endolymphatic hydrops. The audiogram may also show a conductive threshold shift which could be indicative of either chronic middle-ear disease or of otosclerosis. It seems that Ménière's disease is sometimes secondary to otosclerosis.

Békésy audiometry is of twofold value. First, in cases of sensorineural hearing losses, a reduced excursion of the Békésy tracing would indicate that the hearing defect is of cochlear origin. Secondly, a Békésy tracing which shows threshold drift at a given frequency would be compatible with a retrolabyrinthine lesion. If the drift is associated with a high-tone sensorineural hearing loss, the locus is probably in the stato-acoustic nerve. If there is no associated shift of the pure-tone audiogram, the locus is probably in the brain stem. Examination of the blood is primarily with reference to ascertaining a toxi-infectious etiology for the vertigo. The sedimentation rate should be measured, and the C-reactive protein test may be performed. Vertigo is now so rarely due to syphilis that routine serologic tests on the blood need not be performed.

Radiologic examination is of value in a search for funnelling of the internal auditory meatuses in suspected acoustic neuromata; in detecting radio-lucent areas in the mastoid bone which are attributable to cholesteatomata that are responsible for circumscribed labyrinthitis; in looking for infections of the paranasal sinuses which may be responsible for a vestibular neuronitis; in looking for changes in the cervical spine that are responsible for spondylotic compression; and, occasionally, in looking for primary carcinomata in the chest which are responsible for secondary deposits in the posterior fossa.

Many of the vertigos appear to be emotionally determined, so that a psychological assessment is of value. Electroencephalographic examination is of value not only in suspected cases of vertiginous epilepsy, but also in cases of vertebro-basilar artery insufficiency where a low voltage tracing may

be the only abnormal sign. In a suspected case of acoustic neuroma, lumbar puncture may be indicated, since one of the earliest physical signs is a raised protein in the cerebrospinal fluid.

ANALYSIS OF THE CAUSE OF THE DIZZINESS

Figure 1 through 9 show how one might analyze the cause of vertigo on the basis of the history, symptom-review and physical examination.

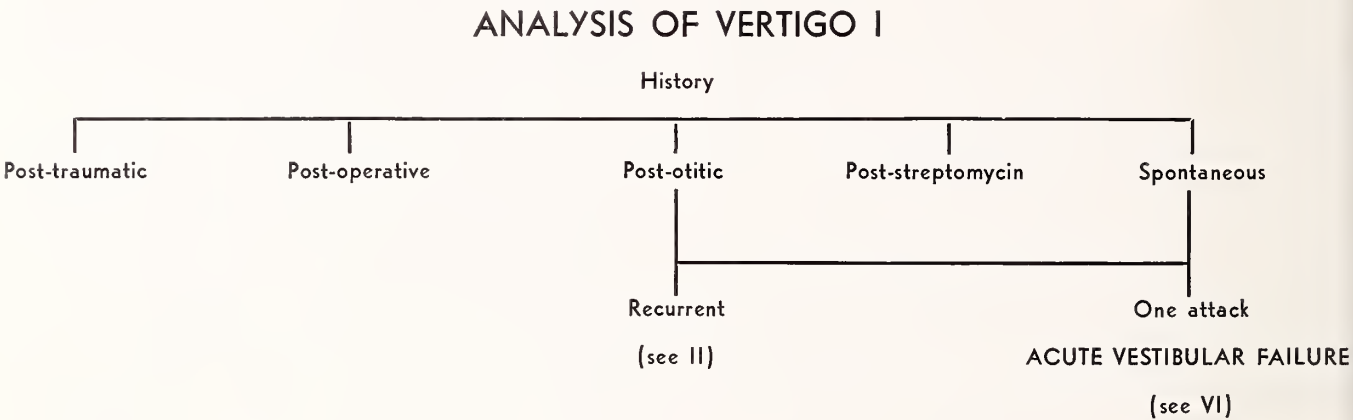


Figure 1

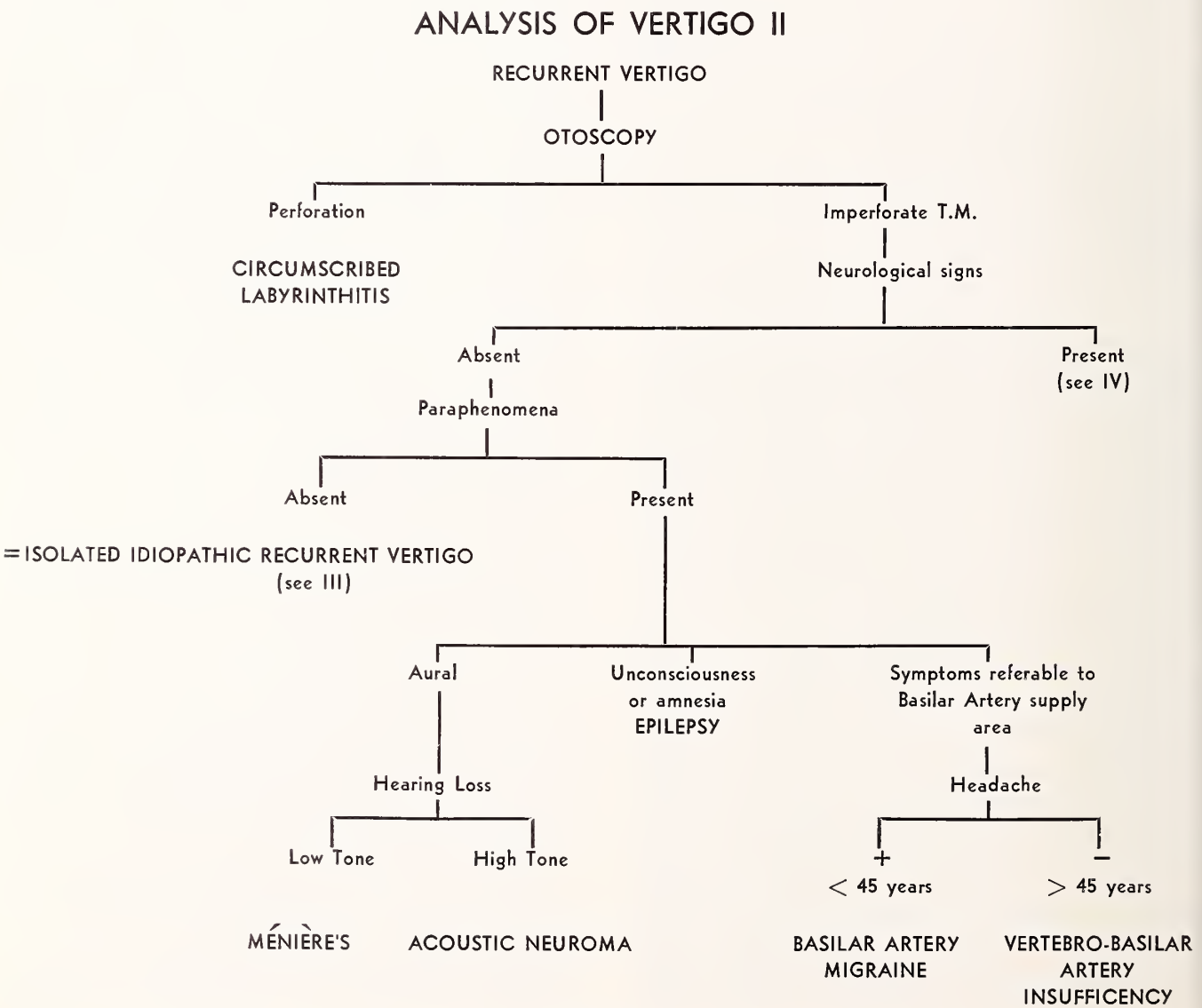


Figure 2

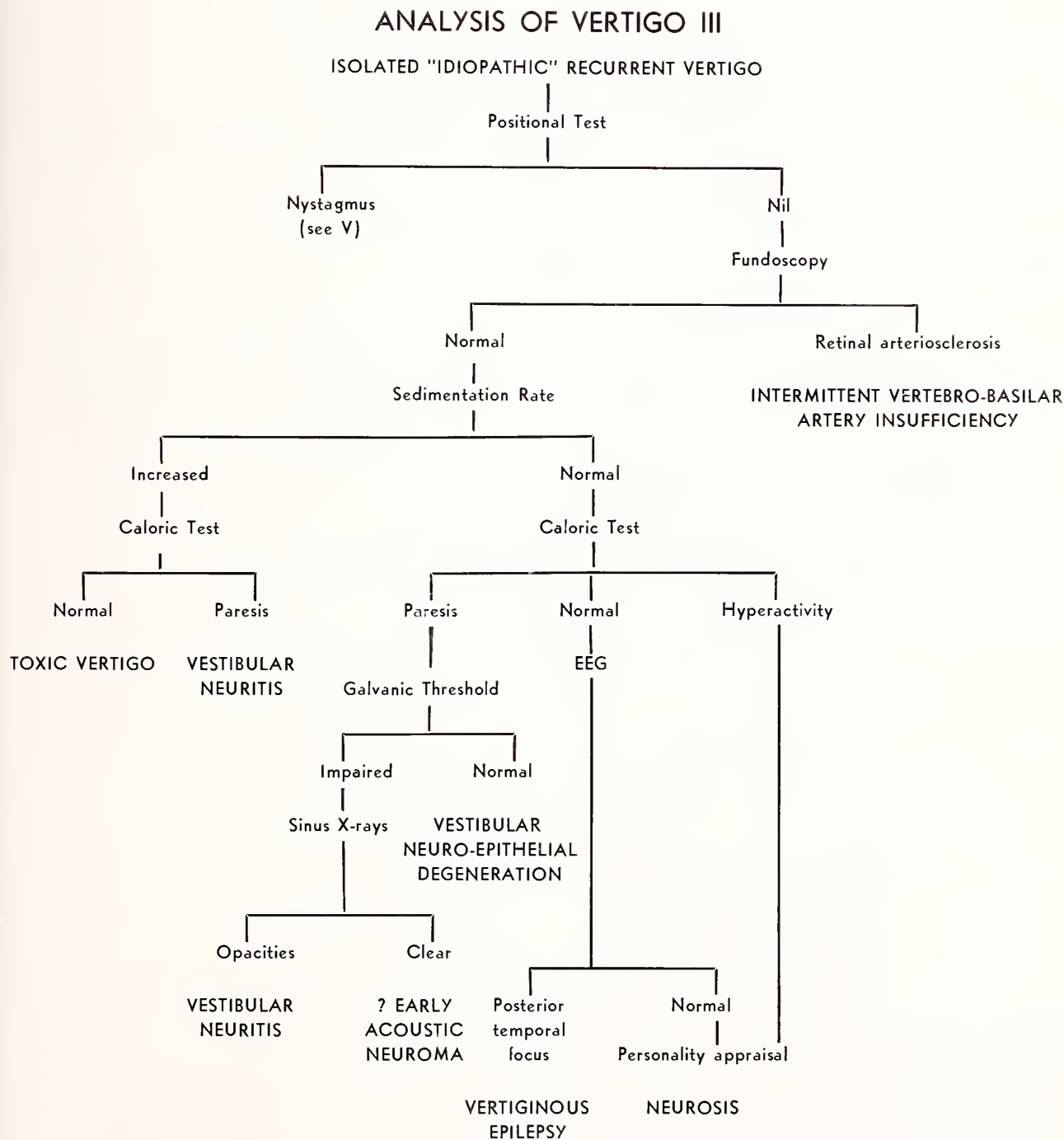
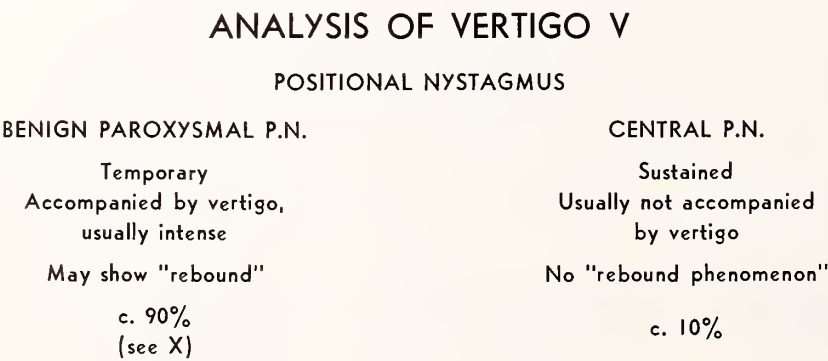
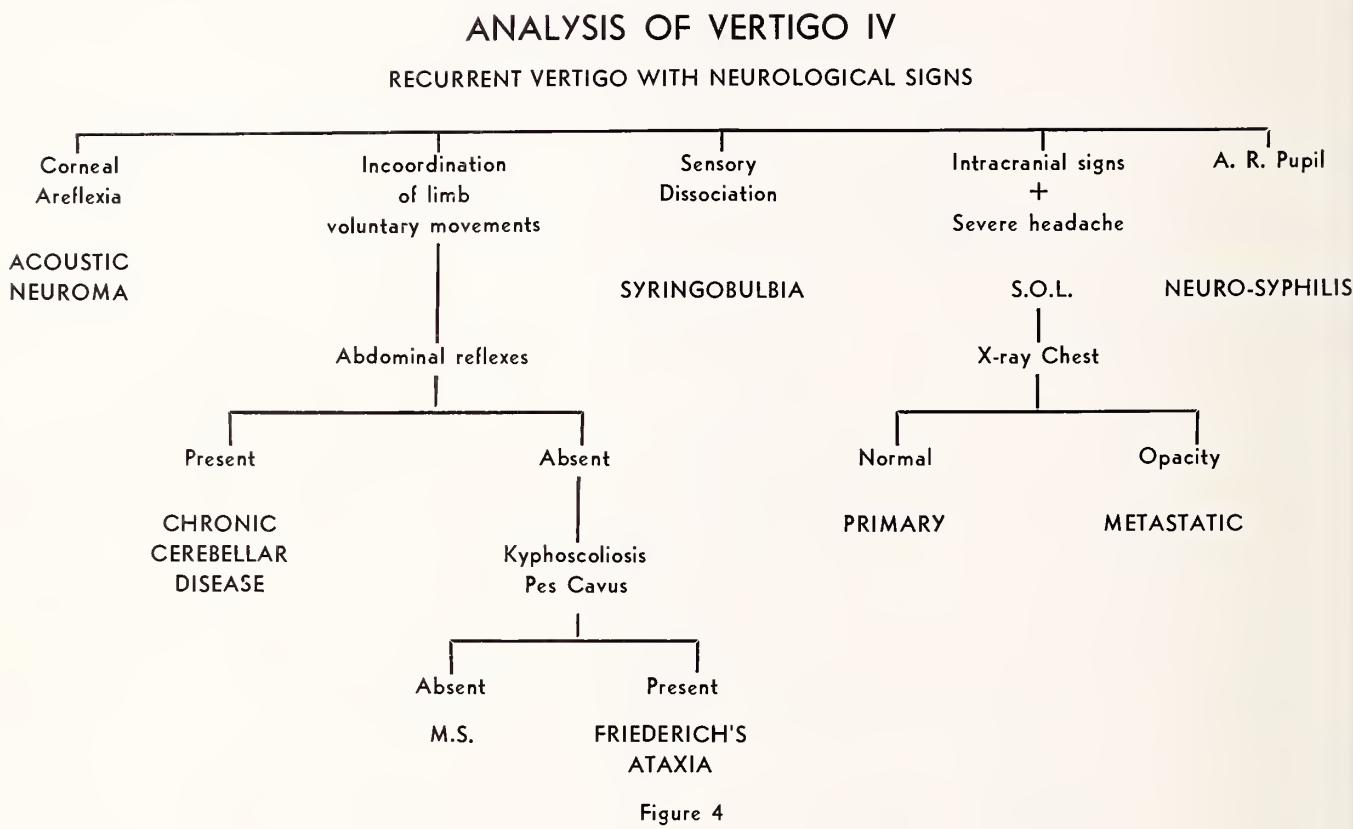


Figure 3



ANALYSIS OF VERTIGO VI

ACUTE VESTIBULAR FAILURE

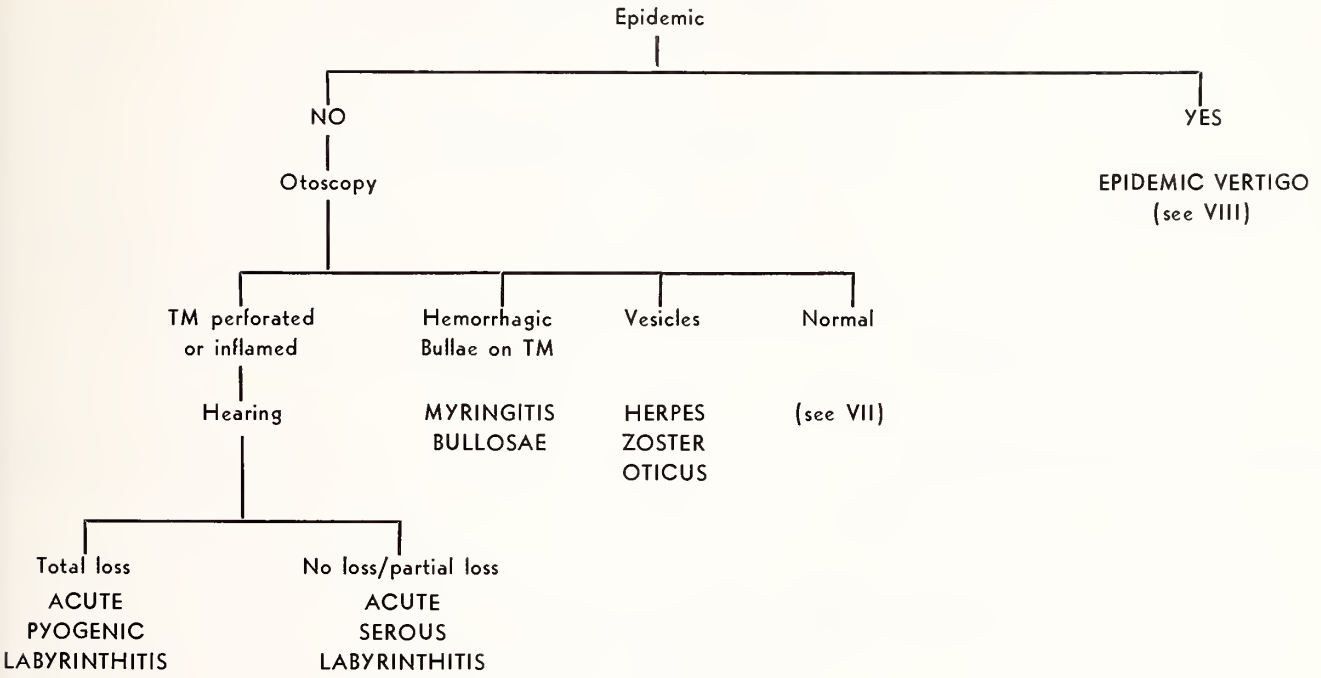


Figure 6

ANALYSIS OF VERTIGO VII

NON-EPIDEMIC ACUTE VESTIBULAR FAILURE WITH NORMAL EARDRUM

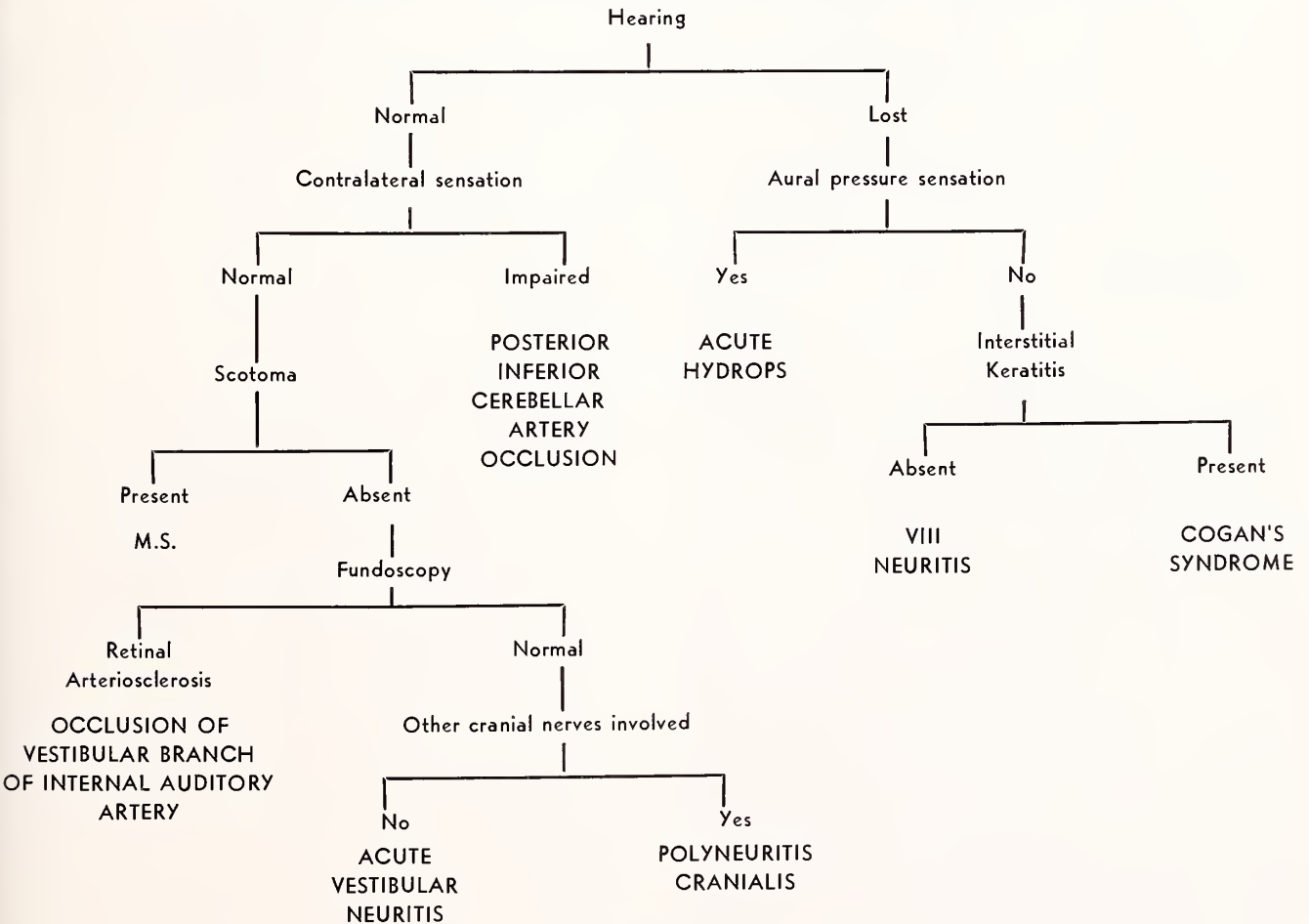


Figure 7

ANALYSIS OF VERTIGO VIII

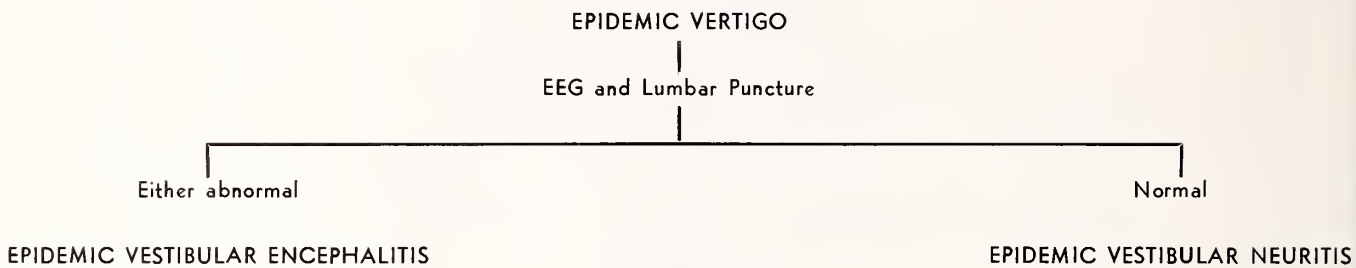


Figure 8

ANALYSIS OF VERTIGO IX

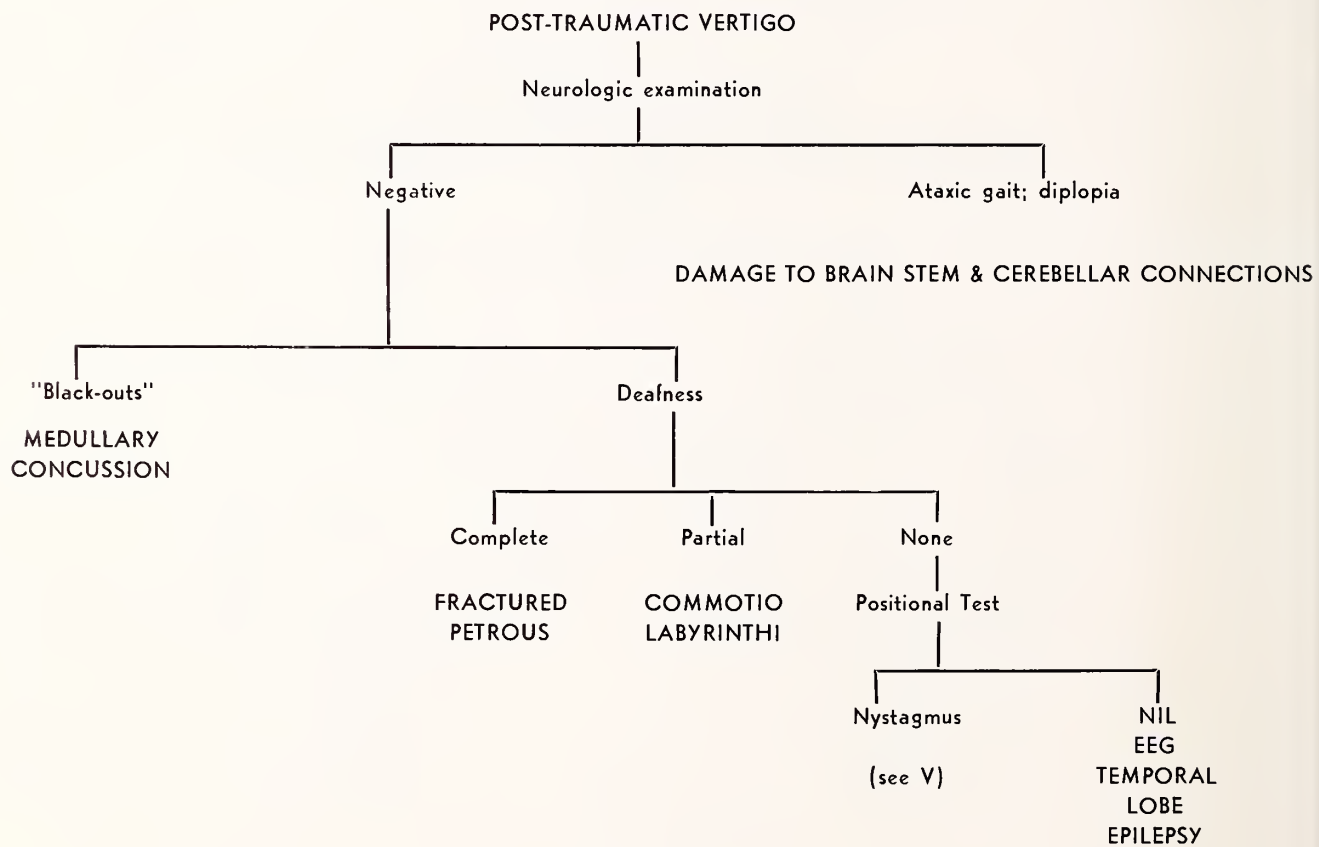


Figure 9

ANALYSIS OF VERTIGO X

PAROXYSMAL POSITIONAL NYSTAGMUS

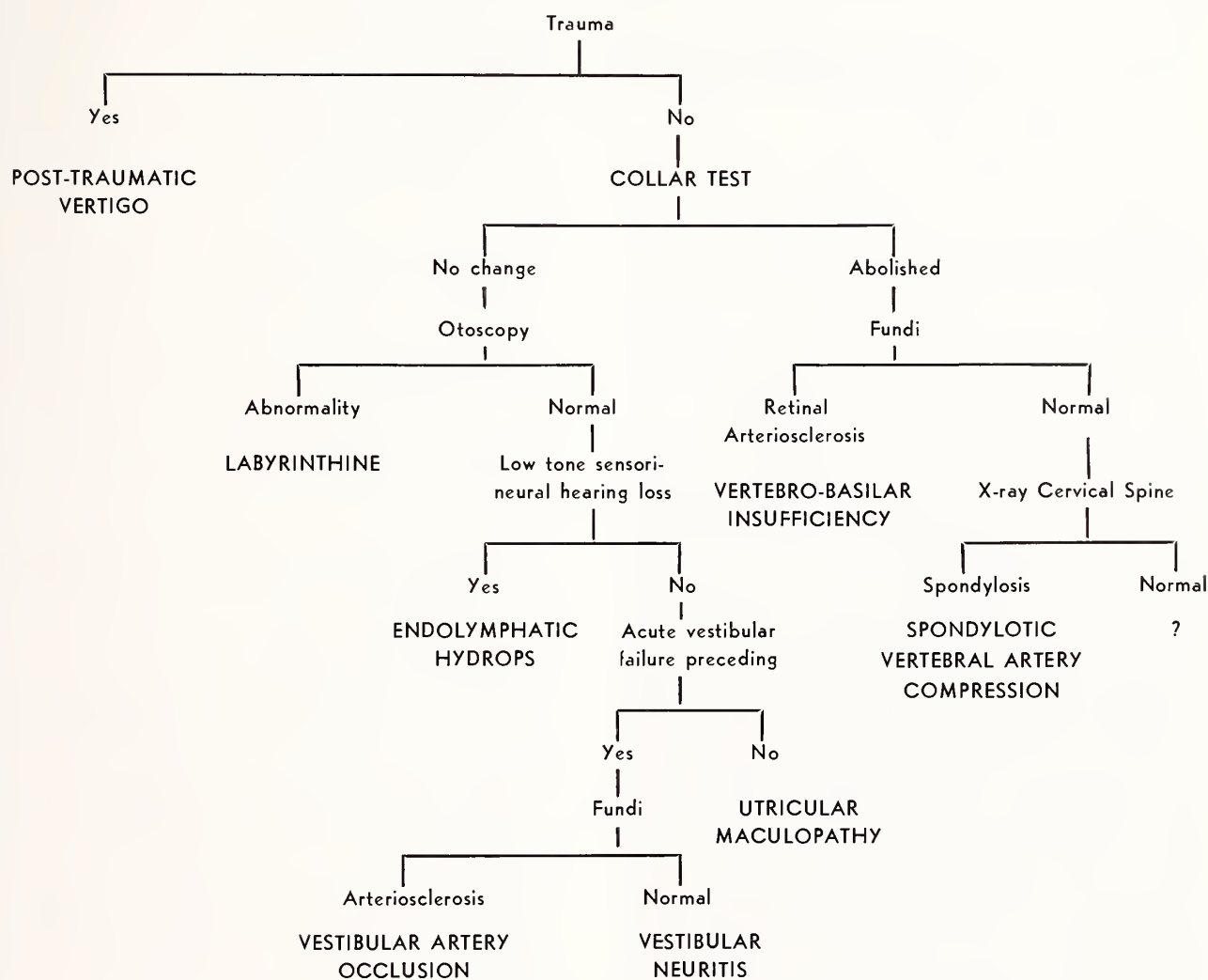


Figure 10

THE MANAGEMENT OF DIZZINESS

The management of an acute attack of dizziness is the same, regardless of its cause. The patient should not be moved unnecessarily, but should be allowed to lie down in as comfortable a position as possible. Many persons describe the journey upstairs, directed by misguided members of their family, the undressing and getting to bed as the worst experiences of their illness.³⁵ The patient and family should be reassured as soon as possible. In fact, whether one is dealing with acute or recurrent vertigo, reassurance and explanation are fundamental to the management. In an acute attack, sodium phenobarbitone 0.2 Gm. intramuscularly may be given immediately, with 30 mg. orally three times a day until the dizziness has worn off.

For cases of recurrent vertigo, such as Ménière's disease, labyrinthine suppressives such as pro-

chlorperazine, 5 to 15 mg. three times a day, have been found to be useful. The doses may be reduced as soon as the symptom has been controlled. However, many cases of Ménière's disease will respond to reassurance and explanation alone. If tranquilization is required, it has been found best to use amobarbital, which is a barbiturate and not strictly a tranquilizer. Tablets of 50 mg. strength should be prescribed twice daily. Severer cases of Ménière's may require surgical intervention.

For post-traumatic vertigos, a system of rehabilitation has been developed. This is a program of physical exercises which are designed to restore balance as far as possible and to train eye muscle and joint senses to compensate for permanent vestibular dysfunction. Because most patients are worse in the dark, one should pay special attention to muscle and joint sense by instructing them to perform many of the exercises with their eyes closed. These head and balance exercises are also

of value for people with positional vertigos. Post-traumatic vertigos also respond well to orphenadrine, in an oral dosage of 50 mg. once or twice daily.

Where a specific etiologic factor has been indicated as the cause of the vertigo, it should of course be treated.

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AMA Disaster Medical Care Meeting

An address by a ranking member of the House Armed Services Committee and a series of workshops on civil defense problems will be features of the 14th National County Medical Societies Conference on Disaster Medical Care. The Conference, sponsored by the American Medical Association's Council on National Security, will be held Nov. 2-3 at the Pick-Congress Hotel in Chicago. The meeting is designed for medical and health personnel concerned with disaster preparedness programs.

Rep. F. Edward Hebert (D., La.) the House committee member and chairman of its subcommittee which considers civil defense legislation, will speak at a luncheon session on Sunday, Nov. 3, discussing Civil Defense in the U. S.

The workshop meetings will be from 2-5 p.m. Saturday, Nov. 2, and cover the following topics: community health service planning, mass casualty

care, hospital planning, training and utilization of allied personnel, medical education for national defense, civil defense emergency hospitals, and coordination of the medical effort with other aspects of civil defense.

Two symposiums on planning and resources are scheduled for Saturday morning's opening session. A third symposium dealing with AMA and government activities in civil defense and disaster care will be held Sunday morning.

Saturday's luncheon speaker will be Lt. Col. Richard L. Coppedge, MC, surgeon for the Special Warfare Center, Ft. Bragg, N. C. He will discuss the Medical Role in the Special Forces.

Additional information and advance registration are available from the Council on National Security, AMA, 535 North Dearborn, Chicago, Illinois 60610.

The Premarital Examination

From the Points of View of a Gynecologist and a Psychiatrist

Robert M. Kretzschmar, M.D.

WHEN WE DISCUSS the premarital examination, we are considering a specific type of patient. She is young; she is about to be married; she is extremely anxious about her forthcoming marriage; and she is concerned about this particular encounter with a physician. She may well have had some sexual experiences, and if so she carries to her meeting with the physician a great deal of anxiety and guilt about those experiences, for she is sure that he will be able to detect any previous exposure. This may be her first pelvic examination, and like most young women she is very apprehensive about it. Some women contemplating their first pelvic examination are terrified.

This young patient comes to the doctor's office with limited but very real objectives. First, there is the legal requirement that she have a certificate signed by a physician stating that she has had a blood test and is free from syphilis. Second, she may desire some counsel in family planning. Third, she consciously or unconsciously wants to be reassured that she is normal, like other women about to be married, and that from the anatomical point of view at least, she can have children normally.

Most of these girls probably desire further sex education. Yet when they come into the doctor's office, they are so oppressed by the anxieties which I have mentioned that they are not in the proper frame of mind to discuss sex problems. Most of them have not had enough sexual experience to know whether they will have any real problems of adjustment in that area. We are deceiving ourselves if we think that in the space of our first meeting with a young girl we can do a significant job of sex education.

THE PHYSICAL EXAMINATION

As physicians, our objectives in the premarital examination are quite different from the patient's. This is probably the girl's first visit to a doctor's office since childhood, and this is a very desirable time in the young woman's life for the doctor to do a complete assessment of her general health. This should include a complete general history and

physical examination, plus certain routine studies such as chest x-ray, blood evaluation and urinalysis. A Papanicolaou smear may be taken at this time. The general physical should include a complete pelvic examination, and since this may be the patient's first pelvic examination, it behooves us not to make the experience traumatic for her. Nevertheless, we must do a complete exam, so that we may reassure her that her genitalia are normal. This is not to imply that the physician needs to complete an infertility evaluation of the patient or that he needs to do pelvic mensuration at this point, since all the patient is concerned about is the physician's clinical impression. In the course of this study, the physician should evaluate the hymen, and if it is rigid and somewhat narrow, he may need to counsel the patient in self-dilatation of the hymen. I am not sure that there is ever an indication for a surgical hymenotomy, unless the hymen is imperforate. With proper instruction in self-dilatation, these girls can make the structure adequate for normal intercourse.

It goes without saying that the physician has a responsibility to diagnose any specific diseases of the genital tract. Diseases such as vaginitis and cervicitis can be diagnosed and treated. Obvious congenital anomalies can be noted and proper steps taken in their treatment.

FAMILY PLANNING

After the examination has been completed, a generous amount of time should be allotted to the patient for a discussion of the physical examination and for answers to any questions that she may have. Family planning should be a part of this discussion. The doctor should find out whether the patient wishes contraceptive advice, and if so, whether she has any religious scruples regarding contraceptive technic. If the rhythm system is indicated, adequate instruction, including charts of the "safe period" should be provided her. If a diaphragm and jelly system, an aerosol foam, or a jelly or cream alone is to be used, the patient can be fitted and/or instructed in their use at the time of the examination, and further instruction can be given her during the counseling period that follows the exam. If the patient is to use a diaphragm, she should insert the proper size of diaphragm into her vagina, herself, and have it checked by the phy-

This two-part discussion was presented at the GP Refresher Course, in Iowa City last February. Dr. Kretzschmar is an assistant professor of obstetrics and gynecology, and Dr. Norris is an associate professor of psychiatry, both at the S.U.I. College of Medicine.

sician so that he can have some assurance that his instruction has been adequate. Nurses who have used such a system can do the actual instructing altogether adequately, but it is still necessary for the physician to check and see that the patient can place the diaphragm satisfactorily. It may be that, as a means of contraception, the patient will want to use one of the newer progestins for ovulation control. If so, the physician has a definite responsibility to explain some of the side-effects and to be cognizant of the patient's medical history as regards thromboembolic disease. An explanation of the recent literature regarding a possible connection between progestins and thrombophlebitis is needed. Progestin control of ovulation is safe and is certainly a very satisfactory means of contraception.

A LIMITED AMOUNT OF COUNSEL

In reviewing the literature on premarital examinations, I have found that authors devote much time and space to sex education and marriage counseling. This is a most difficult topic to cover with a patient who is anxious and whom you are seeing for the first time. The goal in discussing marital sex relations is to alleviate anxiety concerning them. It may be that if we force our counsel upon a patient, we run the danger of creating additional fears in her mind. Thus, the physician needs to have great insight in evaluating his patient and in estimating the amount of rapport that he has established with her. After all, there is a limit to the amount a physician can do in bringing out a deep-seated psychosexual problem within this rather short period of time, and therefore there is a limit to the depth of his inquiry and counseling.

Premarital advice will not prevent many of the difficulties in sexual adjustment that will arise later on in the patient's married life. However, we can accomplish one very important objective. We can point out to the patient that as professional people we are interested and can be helpful if a problem arises. We wish literally to leave the door open for future interviews. For this reason, it is imperative that the patient's total encounter with the physician should be minimally traumatic, psychologically as well as physically, for if it is not, she is unlikely to return.

It might be pointed out that the honeymoon is not all that Hollywood would like us to suppose it. Adequate sexual adjustment is an educational process for both the husband and the wife, and therefore it takes time. With this fact in mind, we should forewarn the patient that she may not experience an orgasm with her first attempt at intercourse. There will be problems that the couple should discuss, when an occasion arises, so that they may learn their sexual adjustment together.

One means of educating a patient in these matters is to refer her to some written material. As

you are aware, a tremendous amount of information is available in the field of sex education, but some of it is frankly erotic and is valueless. A booklet that I have found useful for educational purposes is entitled *A DOCTOR'S MARITAL GUIDE FOR PATIENTS*, by Bernard G. Greenblat. It is well written and concise, and does a good job of discussing the technical part of sex. It should be suggested that both partners read this material. It is only thus that most males can be brought under a physician's influence as regards sex education.

INTRODUCTION TO FAMILY-ORIENTED MEDICINE

In dealing with a young woman about to be married, we have an opportunity to do some general medical education as well. The importance of routine check-up examinations should be stressed. The benefits of the Papanicolaou smear can be mentioned. The generalist has an opportunity to counsel his patient in family-oriented medicine, and to ask her some questions: Does her fiancé have any medical problems? Has he had a routine check-up examination recently? etc. Education in preventive medicine should have a share of the premarital examination.

SUMMARY

A broad approach to the premarital examination has been outlined, in what I have said. The physician's objectives, on that occasion, are much broader in scope than are those of the patient. Sex counseling, family planning and preventive medicine can be covered, or at least initiated, during the premarital examination.

It is most important for the physician to keep this whole experience from being psychologically or physically traumatic for the patient, for if it is, she may acquire an undue fear of physicians, and in consequence may deny herself the privilege of adequate medical care in the future.

A. S. Norris, M.D.

Dr. Kretzschmar has given such a complete account of the premarital examination that I can add virtually nothing. All that is left for me to do is to disagree with him on a couple of points.

Physicians who conduct premarital examinations have the opportunity to refuse the patient her certificate under certain conditions. Patients don't have to see a psychiatrist to get clearance for marriage. If they did, and if I could do so with complete legality, I am afraid I should have to refuse most of the people who came to see me. I say this not on the basis of my own experience but on the basis of statistics which we have gathered and which are growing. These are helping us to realize in just how sad a condition our institution of marriage is, in America and in Iowa. A recent issue of the *DES MOINES SUNDAY REGISTER* reported

that for every two and a third marriages entered into in Iowa last year, there was one divorce. This is a startling statement, but the actual figures are doubtless no more than a faint indication of the seriousness of the condition, for twice as many people file for divorce as actually go through with it. Either the judge refuses to grant a decree, or the parties withdraw the petition. Thus we can say that more than two out of three marriages are imperiled to the point where the partners actually apply for divorce. How many marriages are in lesser degrees of trouble, we have no idea. If a psychiatrist could predict accurately, presumably he would wish to prevent marriage between two-thirds of the couples, on the grounds that they have slight chances of lasting happiness. I don't know of any psychiatrist who *could* do this, but then, no psychiatrist is given an opportunity to try.

Obviously, as Dr. Kretschmar has stated, premarital counseling alone cannot deal definitively with this problem. But it is one of the opportunities built into our system for making an attempt at prevention. The young woman is going to come into contact with a physician who, hopefully, knows something about marriages other than his own. (His own may not be exemplary, since in their personal affairs doctors don't fare appreciably better than anyone else does.) Yet, perhaps he knows something about the pitfalls of marriage, and has some advice to give that may be helpful.

Unfortunately, the doctor frequently doesn't have time to give such advice, or if he has the time, he doesn't know what to say. Medical schools are noted for their lack of courses in marital counseling—for their lack of attention to the rudiments of sexology. Students usually don't get such instruction even from Psychiatry, except in abstract Freudian terms, and thus they get little that they can subsequently utilize with their patients.

Sex has been blamed for almost all marital disturbances, but I think that such charges are based on oversimplification. Sexual incompatibility is often—indeed most often—a symptom rather than a cause of difficulty between husband and wife. Nevertheless it is an important fact that sexual maladjustment *can* be a major contributing cause of divorce, and this of course is one area in which some preventive work might be done.

I agree with Dr. Kretschmar that we cannot probe deep emotional conflicts in 45 minutes. Certainly a psychiatrist can't do it. Sometimes he can't do it in a year. However, sheer ordinary ignorance may be the cause of sexual maladjustment, in the absence of emotional conflict. It is a recognized fact, for example, that 75 per cent of women do not experience a climax during the first few months of marriage. A good sexual adjustment is unusual during the honeymoon, but it ordinarily comes about during the ensuing months and years. This is a matter of a woman's training and experience,

and not one that involves the feeling she had about her father when she was a child.

THE PHYSICIANS' QUESTIONS SOMETIMES MUST BE DIRECT AND SPECIFIC

I agree that the subject of sex is a difficult one to bring up, but I think that the broad question "Is there anything you want to ask me about?" is insufficient. I think that a question of that sort *may* be designed to help the patient relieve herself of anxiety, but I fear that it may also be a technic by which the physician seeks to get himself off the hook. He knows that he has an obligation to counsel his patient, and he may be quite sure she needs instruction, but he is reluctant to talk to her about sex, and by asking a question to which she will almost certainly answer "No," he can salve his conscience and avoid embarrassment. Furthermore, when the patient has declined his offer to discuss the topic, whatever misconceptions remain undisturbed in her mind are her fault rather than his!

Sometimes the physician must ask specific questions. These don't have to be probing ones; they don't have to be demanding; but they do have to be specific. They may produce anxiety on the part of the patient, and if they prove too disturbing, the physician should certainly back off. In many cases the patient will say, "I don't wish to discuss the matter," and when that happens, there is nothing further that the physician can do. But many patients come to the premarital examination concerned not only about their physical condition but about some of the psychological and sexual aspects of their impending marriage. They are embarrassed to ask anyone about such things, and a broad-ended question is not going to encourage them to do so. It is very much easier for them to tell the physician, "No, everything is going to be all right. I'm not worried."

I think that the physician's attitude in asking such questions is extremely important. If his manner is jocular or leering, he obviously is not going to accomplish anything worthwhile. This sort of thing happens. The objective in this interview, obviously, is to establish doctor-patient communications without trauma. I think the doctor must test, with each individual patient, to find out just how far he can go with his questioning. With some patients he can't go any distance at all, and with others he can go a long way, and can relieve anxiety rather than increase it during this brief interview. I want to repeat that I think that asking the patient, "Do you have any questions about sexual relations?" is not going to evoke from her any questions that the physician hasn't already answered!

REASSURANCE

There are some specific worries that these women have. Much of their anxiety is occasioned by

ordinary ignorance that can be corrected. They are concerned about a possible disparity between the sizes of the vagina and the penis, and the possibility that this may interfere with sexual adjustment. This, of course, isn't usually significant. They are concerned about pain and the possibility that it may interfere with marital happiness.

I think it is important that the bride and bridegroom should not expect their honeymoon to be perfect. It isn't so for the woman in most cases. Indeed, the honeymoon is a bloody awful invention! When, hopefully, the couple can look forward to 50 years of life together—though the average nowadays is only about five—I think it would be much better if the bride and bridegroom went off separately for a few days of rest before starting life together, and that the ratio of sexual successes would be a lot higher in consequence. Following weeks of complex preparations and the attendant excitement, couples go through the wedding ceremony, then drive several hundred miles through heavy traffic, and arrive at a motel at 1:00 a.m., exhausted, nervous and—the bride, at least—a little tearful. That isn't exactly a propitious start toward a satisfactory sexual adjustment!

I think the physician should forewarn the patient that temporary frigidity and impotence are not uncommon phenomena, and are not serious. They will become serious, however, if the couple believe they are going to be. This often happens. Many women are greatly worried about just exactly what constitutes normal lovemaking—about what is normal and what is deviant. That is a difficult question to answer. Usually, whatever may lead to intercourse is all right, provided it is acceptable to both partners and will harm neither of them.

Many women are disturbed about the possible consequences of previous sexual activity. They are worried about previous masturbation, or possibly about homosexual episodes (and many of them have had such experiences without ever having been really homosexual). They may be concerned about previous promiscuity. They may feel, because of things they have heard, that a normal sex life is impossible for them. They have been given a great deal of misinformation, and they will believe it unless they are given facts. The very fear about sex, of course, can interfere with sexual adjustment. I think the amount of success that a physician has in correcting these misapprehensions will depend upon the patient's inhibitions, but no less upon the physician's own inhibitions and on his interviewing technic.

ALMOST EVERY PREMARITAL EXAMINEE NEEDS COUNSEL

Often—perhaps more often than not—the patient is no longer a virgin. This circumstance doesn't eliminate the possibility that sexuality may

be a problem for her, for experience in this area is no guarantee of success.

As has been mentioned, we seldom see the groom for a premarital examination, and it is too bad that we don't. Whenever possible, he certainly should be seen. As a matter of fact, I think it is probably more important for the physician to talk to him than to talk to his bride, but it is seldom that he has a chance to do so.

Printed material can be helpful and should be used, but the difficulty is that none of these texts have been prepared for the particular patient to whom the physician may recommend them. Thus it is unlikely that any book will answer the patient's questions satisfactorily. Very often, the book fails to touch upon the problems that are most disturbing to her, as for example the things I have mentioned. The booklet *A YOUNG WOMAN SEEKS PRE-MARRIAGE COUNSEL*, by C. L. McCormick, for instance, states that two-thirds of all divorces are caused by sexual difficulties. Rather than being reassuring, this is an extremely anxiety-provoking statement for the woman or the man who realizes that the honeymoon has been a protracted nightmare. Such people are likely to jump to the conclusion that the marriage they have just begun is doomed. On the contrary, I think it is important to let the woman know that initial failures are to be expected.

There is great emphasis, in the McCormick pamphlet, upon the passive role of women. The only women I know of who are content to remain as passive as those he describes are Japanese. The man is idealized in an entirely unrealistic manner. He is represented as perfect, and the author states quite clearly that if the girl will only conform to her husband's demands, everything will be fine. The implication is quite clear that he is right, and that if she wants something different, she must be wrong. Before marriage, when the woman reads this pamphlet, she may be willing to accept the author's point of view. She loves her prospective husband, and this is the way she really sees him. But after marriage, she no longer sees him in that light, and because the pamphlet has placed all of the responsibility for adjustment upon her shoulders, she is likely to feel rather guilty, if not merely angry.

We see how impossible these standards are when we observe the immaturity of some of the patients who show up for premarital examinations. Among the four couples whose marriage license applications were reported in a recent issue of the *IOWA CITY PRESS CITIZEN*, the oldest individual was 20 and the other seven were 16, 17 and 18 years of age. This is the kind of thing that is certain to cause trouble. To expect such marriages to succeed is unrealistic.

It should be remembered that about one-third of the women who come for premarital examinations not only have had intercourse, but either are

or have been pregnant. Such a woman, for the time being at least, may not be particularly concerned about her subsequent sexual success, and likewise isn't concerned about her ability to conceive. In such instances the counseling portion of the premarital session with the doctor can take directions other than those that we have been discussing. If the patient is currently pregnant, it can conclude with a prenatal examination.

Such a patient's sexual problems may not have been solved; on the contrary, new ones may have been created. This young woman is going to have mixed feelings about her child, though she is not peculiar in this regard since all women do anyway. Her negative and hostile feelings about her baby are simply going to be stronger than usual. She will feel a lot more guilt and anxiety about this pregnancy, and when there are such possibilities, I think the physician is obligated to talk with her about them, rather than to ignore the matter.

SUMMARY

In conclusion, I want to say that I realize the impracticality of a doctor's attempting to do all of

these things during the premarital interview. I don't do premarital examinations, but I think I can appreciate to some extent the difficulties faced by the physicians who do them routinely. I have just been talking about what could be beneficial under possibly ideal circumstances.

In some instances, at least, I think physicians could do more than they are doing. These aren't little things; they are very important things at this time. These are matters which can be handled very easily during the premarital examination, and they may be irremediable in the doctor's office or in the divorce court five years later. As short a time as 15 or 20 minutes, either in discussing possible pitfalls or in "opening the door" can help very significantly in assuring the success of the marriage.

Marriage, as an institution in this state and country, is pretty sick, and the best premarital examinations are not going to cure it, no matter how psychiatrically-oriented they are. But with a great deal of thought and effort, we physicians can do something to ameliorate its condition, and I think we have an obligation to try!

Unmarried Mothers in Iowa: A Sociologic Study

DAGMAR KALLI HAMILTON, M.S.

Des Moines

ALMOST ALL ADULTS who work with young people of junior high school age or older can testify to the seriousness of the problems occasioned by unmarried motherhood. Thus, they want answers to a number of important questions such as: "Is the number of illegitimate pregnancies increasing?" "If so, is the increase disproportionate to the country's growth in total population?" and "Are there any similarities in these girls' backgrounds or previous environments, or in their readily ascertainable characteristics that might

Mrs. Hamilton is employed by the Des Moines Board of Education to instruct those of the girls at the Salvation Army's institution for unmarried mothers, in Des Moines, who have been attending school and who wish to continue their academic work. The program is cosponsored by the Division of Special Education of the State Department of Public Instruction so that the girls will be eligible regardless of where their legal residences may be.

help clergymen, physicians, teachers and parents to recognize girls who are more likely than others to get into this particular sort of difficulty?"

Interested people in our state, of course, are most anxious for answers to such questions as: "Is the problem more serious in Iowa than in other parts of the nation, or is it less so?" "Who is the Iowa girl who, typically, is most likely to become an unmarried mother?" "How old is she?" "Is she the daughter of divorced or separated parents?" "Has her mother held a job outside the home?" "Is her family no more than marginal, economically?" etc.

In an attempt to find answers to as many as possible of these questions, the writer analyzed admission records at Booth Memorial Hospital, Des Moines, for two calendar years, 1957 and 1962, and the findings will be presented in this paper.

DIMENSIONS OF THE PROBLEM—IN THE U. S.
AND IN IOWA

Mrs. Katherine Brownell Oettinger, chief of the Children's Bureau of the HEW Department, and

Leontine Young, professor of casework at Ohio State University, have stated that the actual size of the problem of illegitimate pregnancy is not known, but is certainly larger than the public assumes it to be.^{1, 2} Statistics are available for the nation and for each state, but these figures are not necessarily accurate for several reasons: (1) Some states do not require the designation "illegitimate" to appear on the birth certificate. (2) The number of illegitimately pregnant women who register falsely as married women (for example, in the name of the woman who is to take the baby and represent it as her own) when they enter a hospital for obstetrical service cannot be determined. (3) The number of abortions, induced or spontaneous, among illegitimately pregnant women is also unknown. (4) Some such births probably are not registered at all.

Table 1 presents the estimated number of illegitimate live births in the United States annually, for the years 1940 through 1960. The figures for the more recent years are as yet unavailable. It will be noted that the increase in incidence has been startling and consistent, progressing from 89,500 in 1945 to 224,300 in 1960.

TABLE 1
ESTIMATED ILLEGITIMATE LIVE BIRTHS IN THE U. S.:
1940 TO 1960

Year	Number
1940	89,500
1945	117,400
1950	141,600
1958	208,700
1959	220,690
1960	224,300

Source: STATISTICAL ABSTRACT OF THE U. S., 1962, p. 57, published by the U. S. Department of Commerce.

Table 2 shows the estimated illegitimate live births in the United States in 1960 by age of mother. The largest group of girls were 15-19 years of age, and the next largest group were 20-24 years old. The smallest groups were those under 15 and over 40.

Table 3 provides information on the numbers of illegitimate births to Iowa residents for each of the past 25 years—1938 through 1962—together with the ratio of illegitimate births to the total of live births. Although these figures are actual counts, rather than estimates, they do not necessarily show the total picture for the reasons already stated and for the further reason that some illegitimately pregnant Iowa girls doubtless go for their confinements to states with which the Division of Vital Statistics of the Iowa State Department of Health has no agreement for the exchange of statistics.

TABLE 2
ESTIMATED ILLEGITIMATE LIVE BIRTHS IN THE U. S.,
BY AGES OF MOTHERS, 1960

Ages of Mothers	Number	Per Cent
Under 15	4,600	2.05
15-19	87,100	38.83
20-24	68,000	30.32
25-29	32,100	14.31
30-34	18,900	8.42
35-39	10,600	4.73
40 and over	3,000	1.34
Totals	224,300	100.00

Source: STATISTICAL ABSTRACT OF THE U. S., 1962, p. 57.

TABLE 3
ILLEGITIMATE LIVE BIRTHS TO IOWA RESIDENTS:
1938-1962

Year	Number of Illegitimates	Illegitimates per 1,000 live births
1938	746	17.4
1939	703	16.4
1940	657	14.8
1941	719	15.8
1942	694	14.6
1943	676	14.5
1944	690	15.2
1945	915	20.6
1946	1,066	19.2
1947	1,153	18.1
1948	1,084	17.9
1949	1,075	17.4
1950	1,065	17.0
1951	1,062	16.1
1952	1,007	15.7
1953	1,043	16.7
1954	1,098	17.4
1955	1,208	19.0
1956	1,161	18.4
1957	1,182	18.6
1958	1,305	21.0
1959	1,453	22.5
1960	1,476	23.4
1961	1,672	23.7
1962	1,637	26.8

Source: Division of Vital Statistics, Iowa State Department of Health.

During this 25-year period, the reported illegitimate births to Iowans has increased more than two-fold, from 746 to 1,637. However, the ratio (the number of illegitimate births per 1,000 total live births) has not increased so dramatically. The ratio remained under 20 per thousand from 1938 through 1957, with the exception of one year,

1945—a war year, it will be recalled. From 1958 through 1962, the ratio has increased consistently. During 1962, there were 26.8 illegitimates in every 1,000 live births to Iowans.

On the basis of its estimates, the Federal Bureau of Vital Statistics publishes the numbers of live births, numbers of illegitimate live births and ratios of illegitimate to total live births, for each year, classified as to the mothers' color—"white" and "non-white." Table 4 presents that information for the United States and for Iowa, covering the years 1956 to 1959. The Iowa incidences of illegitimacy in each category—total, white and non-white—are less than those for the nation. Apparently the disparity between the rates for Iowa and for the nation as a whole reflects the facts that illegitimacy rates are higher among non-whites than

TABLE 4
ESTIMATES OF ILLEGITIMATE BIRTHS PER THOUSAND
LIVE BIRTHS, BY COLOR
U. S. AND IOWA, 1956-1959

Year	Illegitimate Births per Thousand Live Births		Total		White		Non-White	
	U. S.	Iowa	U. S.	Iowa	U. S.	Iowa	U. S.	Iowa
1956	46.5	18.0	19.0	16.3	204.0	163.9		
1957	47.4	18.9	19.6	17.1	206.7	155.2		
1958	49.6	20.7	20.9	18.7	212.3	165.5		
1959	52.0	22.2	22.1	19.6	218.0	189.0		

Source: VITAL STATISTICS OF THE U. S., 1959, Vol. I.

among whites (218 as against 22.1 illegitimates per 1,000 live births in the nation as a whole, and 189 as against 19.6 illegitimates per 1,000 live births in Iowa, in 1959); and that in Iowa the non-white segment of the total population (1.05 per cent) is much smaller than it is for the U. S. as a whole (11.43 per cent).³

BOOTH MEMORIAL HOSPITAL—DES MOINES

The girls admitted to Booth Memorial Hospital, Des Moines, who were the subjects of this study, totaling 154 in 1957 and 172 in 1962, represented 13.0 and 10.5 per cent, respectively, of the known numbers of Iowans who bore illegitimate children in those two years. Though such segments may be too small to serve as bases for definitive conclusions about the social characteristics of all unmarried mothers in Iowa for those years, they perhaps are large enough to show trends.

The data which will be presented in the remainder of this paper were secured through an analysis of records at Booth, accomplished with the cordial cooperation of Brigadier Margaret Norris, superintendent of the institution. The Des Moines facility is one of 36 such institutions owned and operated by the Salvation Army in the United

States. It is a United Campaign agency, a member of the American Hospital Association and of the American Protestant Hospital Association, and it is licensed by the Iowa State Department of Social Welfare to serve as a home and hospital for a maximum of 48 girls at any one time. Most of the deliveries occur at Booth, but should complications develop, the girls are transferred to a local medical hospital. Weekly clinics are held, at which the girls are seen by a doctor of medicine as often as is indicated.

Girls may enter Booth as early in their pregnancy as they wish, and for medical reasons they are encouraged to enter at least eight weeks before they expect to deliver. Ordinarily they remain for 10 days after delivery. The lengths of stay of those admitted in 1962 ranged from 10 to 250 days, and the average was 98.2 days. The two girls who remained only 10 days had entered while in labor. Occasionally a girl remains longer than 10 days after delivery to permit her guardian to complete plans for her subsequent care. School girls who wish to participate in the academic program at Booth frequently enter earlier in their pregnancies than do older girls.

Regardless of race, color, age or religion, nearly any illegitimately pregnant girl who needs the services that Booth offers is eligible for admission. The girls who are not accepted are those who have health problems which the institution is not equipped to handle—e.g., active tuberculosis, venereal disease or mental illness. A background of antisocial behavior does not ordinarily prevent a girl's entry. Indeed some of them come there through juvenile court, and some come from the Girls' Training School at Mitchellville. However, if a girl's behavior at Booth is found to be highly disturbing to the others, her guardian may be asked to make plans for her elsewhere.

The cost to the girls is computed on the basis of the actual expense of operating the facility. In some instances, the girl's parents can make a claim against their hospitalization insurance; others ask assistance from the office of the Department of Social Welfare in their home county. Some girls pay for their care from their earnings in jobs that they secure after leaving. For some, Booth assumes part of the cost, and for others it assumes the whole cost.

Those girls who do not have a social worker when admitted are referred to the casework agency of their choice for help in planning for their babies and/or for themselves. Usually, the choice is determined by the girl's religion. Lutheran girls choose referral to the Lutheran Welfare Society, Catholic girls to Catholic Charities, and others to the Iowa Children's Home Society, a non-denominational agency.

Occasionally, as has been mentioned, a girl is already in labor when she is admitted, but usually

when a girl enters Booth she does not confront an entirely unknown situation. In advance of her admission, she or her family have secured considerable information about the facility. She may have talked to someone—a doctor, a social worker or a school councilor—about Booth; she may have written a letter of inquiry and received a detailed reply; or she may have visited there. She has applied for admission by filling out an application blank and by submitting medical reports. She has been told that she will be admitted, and the date of her entry has been agreed upon.

At her intake interview, which occurs during the first few days of her residence there, she is asked to give factual information about herself and her family, and the interviewer records her answers to questions upon the "Factual History Blank" prepared by the Salvation Army. It was Factual History Blanks and subsequent records that were reviewed in obtaining data for this study. All admissions for the calendar years 1957 and 1962 were checked.

Of the 156 girls admitted to Booth in 1957, two were found to be non-pregnant and 21 left before delivery. The 133 deliveries included three spontaneous abortions, one stillbirth and 129 live babies.

Of the 172 girls who were admitted in 1962, there were 24 who left before delivery. The remaining 148 gave birth to live infants, but one baby died soon after birth.

The girls who left the institution before confinement did so for various reasons. A few were asked to leave because their behavior had been disturbing to the other girls. Some left to be married, whereupon there would no longer be a need for keeping the pregnancy a secret. In some cases a girl's parents reconsidered their decision to have her live away from home, or arranged to have her live with relatives or friends. Still others left to carry out plans they had made for themselves. Some, for example, had found private homes where they could work for their maintenance. It is unknown, incidentally, whether all of these girls secured adequate prenatal care after leaving Booth.

THE GIRLS' AGES

Table 5 presents the age distribution of the unmarried mothers admitted to Booth Memorial Hospital, Des Moines, in 1957 and in 1962. The ages of those who delivered at Booth are given as of the time of delivery, and the ages of those who left before confinement are given as of their admissions. In 1957, 50.0 per cent were 18 years of age or younger, and in 1962 the percentage who were 18 years of age or younger was 55.8. For 1957, the median age was 18, and for 1962 it was slightly under 18.

The data on age must be read with insight, for the biologic behavior that resulted in the illicit

TABLE 5
ILLEGITIMATELY PREGNANT GIRLS ADMITTED TO
BOOTH HOSPITAL, DES MOINES, BY AGE

Age	1957			1962		
	Delivered at Booth*	Left Before Delivery**	Total	Delivered at Booth*	Left Before Delivery**	Total
12	0	0	0	1	0	1
13	0	1	1	2	0	2
14	6	1	7	4	0	4
15	10	3	13	12	2	14
16	16	2	18	24	3	27
17	13	3	16	18	7	25
18	19	3	22	20	3	23
19	18	2	20	16	4	20
20	9	1	10	16	2	18
21	11	2	13	17	1	18
22	6	1	7	7	0	7
23	5	1	6	0	1	1
24	2	0	2	1	0	1
25	4	0	4	0	0	0
26	4	0	4	1	1	2
27	2	0	2	1	0	1
28	4	0	4	1	0	1
29	0	0	0	0	0	0
30	1	1	2	0	0	0
31	1	0	1	1	0	1
32	1	0	1	1	0	1
33	1	0	1	2	0	2
34	0	0	0	1	0	1
35	0	0	0	1	0	1
Totals	133	21	154	148	24	172

* Age at time of delivery.
** Age at time of admission to Booth.

pregnancy occurred, of course, some nine months before delivery. The "12-year-old" included in the 1962 tabulation, for example, was delivered of a full-term infant three days after her twelfth birthday. Presumably conception occurred when her age was 11 years and 3 months. Similarly, one of the 13-year-olds had conceived when she was 12.

Oettinger¹ has stated that one in five illegitimate pregnancies occurs in a girl under 18 years of age. Young² believes that two of five unmarried mothers are under 18. The figures in Table 5 give credence to Young's belief, for they show that 35.7 per cent of the 1957 group, and 42.4 per cent of the 1962 group at Booth were under 18 years of age.

Of the girls in this study, 63.0 per cent in 1957 and 67.4 per cent in 1962 gave birth at 19 years of age or younger, but according to the estimates of the federal Bureau of Vital Statistics, the 19-and-under age group is no more than 40.9 per cent of all unmarried mothers. The larger proportion of youngsters at Booth perhaps reflects parental con-

cern for daughters who still are members of their parents' households and for whom decisions are still being made by their fathers and mothers. It may be that a greater share of the older, wage-earning girls meet the needs occasioned by illegitimate pregnancy otherwise than by seeking admission to a facility such as Booth.

THE GIRLS' EDUCATIONAL ATTAINMENTS AND AMBITIONS

Table 6 shows the highest grade completed by those of the girls who said they intended to seek no further education. In 1957, there were 96 out of 154 girls (62.3 per cent) who said that they were through with going to school. The table contains data on just 92 of them, for grade levels had not been recorded for four of them. In 1962 there were 85 out of 172 (49.4 per cent) who had reached that decision. The fact that a smaller share of girls in the more recent year said they were through with school may merely be a reflection of the greater and greater value that our society is placing upon educational attainment.

Table 7 shows the grade levels of the girls who definitely planned to return to school. In 1957 there were 58 of them (37.7 per cent), and in 1962 there were 87 (50.6 per cent). During the school

TABLE 6
GIRLS ADMITTED TO BOOTH HOSPITAL WHO SAID THEY HAD COMPLETED THEIR EDUCATION BY HIGHEST GRADE ATTAINED: 1957 AND 1962

Highest grade attained	Number, 1957	Number, 1962
6	2	0
8	4	6
9	10	6
10	9	9
11	7	3
High school graduation	44	47
Business college	4	2
Nurse's training, one year	1	0
Nurse's training, two years	2	0
Nurse's training, three years	1	0
Nurse's training, practical	0	1
Beauticians' school	2	5
Airline stewardess training	0	1
Dental Technology course	0	1
College, one year	1	2
College, two years	2	2
College degree	1	0
Subtotals	92	85
Girls on whom data were not secured	4	0
Girls who planned to continue school	58	87
Totals	154	172

year, most of those who had not completed high school participated in the academic program provided at Booth Hospital by the Des Moines Public Schools, and some college students took correspondence courses.

TABLE 7
GRADE LEVELS OF GIRLS ADMITTED TO BOOTH HOSPITAL IN 1957 AND 1962 WHO SAID THEY PLANNED TO CONTINUE THEIR EDUCATION FOLLOWING THEIR DISCHARGE

Grade	Number, 1957	Number, 1962
6	0	2
7	0	5
8	7	3
9	9	11
10	12	27
11	17	17
12	6	12
Business college	1	2
Beauticians' school	0	1
Nurses' training	1	0
College		
Second year	1	4
Third year	2	3
Fourth year	1	0
	5	7
Subtotals	58	87
Girls who had completed their formal schooling	96	85
Totals	154	172

SOME OF THE GIRLS HAD HELD JOBS

Table 8 lists the jobs that had been held by those girls who had been working prior to their admission to Booth Hospital. The largest number of these, in both years, had been engaged in clerical work. Only seven of the 1957 group had been waitresses, but 21 of the 1962 group had been thus employed. Of the six hospital workers who were admitted in 1957, five had been nurses' aides and one was a registered nurse. All 13 hospital workers in 1962 had been nurses' aides.

THE GIRLS' LIVING ARRANGEMENTS PRIOR TO ADMISSION

In Table 9, information is presented on the girls' living arrangements prior to their admission to Booth Hospital. It will be noted that a majority of the girls came from intact homes—ones in which both parents were present. However, the percentage dropped from 63.3 in 1957 to 57.0 in 1962. More than one fifth of them (22.7 per cent in 1957 and 26.7 per cent in 1962) had lived with other rela-

TABLE 8
ADMISSIONS TO BOOTH HOSPITAL CLASSIFIED BY
OCCUPATION, 1957 AND 1962

Kind of Work	Number, 1957	Number, 1962
Clerical work	34	26
Waitress work	7	21
Hospital work		
as nurse's aide	5	13
as registered nurse	1	0
	6	13
Factory work	5	3
Teaching	3	0
Beauty parlor work	2	4
Telephone switchboard work	1	1
Housework	1	5
Dental technology	0	1
Sales	0	3
Laundry work	0	1
Military service	0	1
Cooking, short order	0	1
	—	—
Subtotals	59	80
Girls who had not held full-time jobs	95	92
	—	—
Totals	154	172

TABLE 9
PRIOR LIVING ARRANGEMENTS OF GIRLS ADMITTED
TO BOOTH HOSPITAL IN 1957 AND 1962

	Number, 1957	Number, 1962
With both parents	81	98
With mother and stepfather	10	14
With father and stepmother	2	2
With mother only	10	10
With father only	1	3
With sister	3	4
With grandparent(s)	2	7
With brother	1	1
With husband	0	1
In an apartment or rooming house ..	12	15
Miscellaneous	6	13

SUMMARY IN PERCENTAGES

	Per Cent	Per Cent
With both parents	63.3	56.98
With other relatives	22.7	26.74
With non-relatives	14.0	16.28

tives. The remainder, 14.0 per cent in 1957 and 16.3 per cent in 1962, had had living arrangements away from any relative.

Data on the stability of the girls' residence in the communities they called "home" are given in

TABLE 10
PRIOR STABILITY OF RESIDENCE OF GIRLS ADMITTED
TO BOOTH HOSPITAL IN 1957 AND 1962

	Number, 1957	Number, 1962		Number, 1957	Number, 1962
Years			Years		
Less than 1	3	12	11	1	5
1	6	5	12	5	5
2	5	6	13	0	5
3	4	6	14	3	5
4	6	1	15	3	5
5	2	8	16	0	4
6	2	5	17	0	2
7	2	6	18	0	3
8	2	3	19	0	2
9	1	1	"All my life"	76	78
10	4	5	Totals	125	172

SUMMARY IN PERCENTAGES

	Per Cent 1957	Per Cent 1962
Less than five years	19.2	17.4
Five to 10 years	10.4	16.3
More than 10 years	70.4	66.3

Table 10. Of the 1957 admissions, 19.2 per cent had lived in their most recent home towns less than five years; of those admitted in 1962, even fewer—16.3 per cent—had lived there less than five years. The majority in each year—70.4 per cent in 1957 and 66.3 per cent in 1962—had lived in the same town for more than 10 years.

A preponderance of the girls were Iowans; 89.6 per cent in 1957 and 85.5 per cent in 1962 were Iowa residents. Sixteen of the 1957 admissions came to Booth from other states—four each from Minnesota and Missouri; three from Illinois; two from Wisconsin; and one each from Kansas, Nebraska and South Dakota. In 1962 the 25 admissions from states other than Iowa were distributed as follows: six from Minnesota; five each from Illinois and Nebraska; two each from Missouri, South Dakota and Colorado; and one each from Michigan, Ohio and Florida. In 1962, the girls represented 87 communities—70 in Iowa and 17 in other states. They came from towns and cities of all sizes. In 1962, the distribution of admissions by size of home town was as follows:

From cities or towns of less than 5,000 population

From cities of between 5,000 and 25,000 population

From cities of more than 25,000 population

From out-of-state

29.7%

15.1%

40.7%

14.5%

100.0%

The sizes of the sibling groups from which the 1957 and 1962 admissions came varied from one to

TABLE 11
SIZES OF SIBLING GROUPS FROM WHICH ADMISSIONS
TO BOOTH HOSPITAL CAME: 1957 AND 1962

No. of Children in Family	1957		1962	
	No. of Girls	Per Cent	No. of Girls	Per Cent
1	15	10.0	12	7.1
2	26	17.3	29	17.1
3	31	20.7	32	18.8
4	24	16.0	28	16.5
5	17	11.3	22	12.9
6	14	9.3	19	11.2
7	7	4.7	5	2.9
8 or more	16	10.7	23	13.5
Totals	150	100.0	170	100.0

12 children in 1957, and from one to 14 in 1962. Table 11 shows that the modal size of family for both years was one that included three children, and families containing two and four children second and third most numerous. Since most families contain two, three or four children, it is to be expected that virtually any human phenomenon can be found to occur most often in families of those sizes.

In an attempt to determine whether a girl's nu-

TABLE 12
HIGHEST SCHOOL GRADES COMPLETED BY FATHERS
OF GIRLS ADMITTED TO BOOTH HOSPITAL
IN 1957 AND 1962

1957			1962		
No education	2	0	Grade 11	4	14
Grade 1	0	0	H. S. graduation	19	45
Grade 2	1	0	Business college	1	2
Grade 3	0	0	Technical school	2	1
Grade 4	2	0	College, one year	4	3
Grade 5	5	4	College, two years	1	4
Grade 6	0	5	College, three years	1	0
Grade 7	1	1	College graduation	3	7
Grade 8	23	48	Graduate school	0	6
Grade 9	3	7			
Grade 10	5	8	Totals	74	155

SUMMARY IN PERCENTAGES		
	1957 Per Cent	1962 Per Cent
Completed no more than elementary grades	45.9	37.4
Attended high school, but did not graduate	16.2	18.7
Graduated from high school	25.7	29.0
Continued formal education beyond high school	12.2	14.9
	100.0	100.0

merical place in her sibling group could have played a part in her becoming an unmarried mother, the investigator tabulated the admissions for both years as to the girls' positions in their family groups. In the 1957 data there seemed to be an indication that the second and third children were more vulnerable than the first to a catastrophe of that type. Of the girls whose families contained more than one child, 27 were first children, 51 were second and 32 were third. But among the 1962 admissions, 55 such girls were first children, 41 were second and 19 were third. Hence, no conclusions could be drawn from the evidence.

In Table 12, data are presented on the educational attainments of the fathers of some of the girls. Information was available on 74 fathers of girls admitted to Booth in 1957, and on 155 fathers of girls admitted in 1962. The educational level of the latter group seems to have been slightly higher than that of the former. Those who had completed no more than the elementary grades (including grade 8) comprised 45.9 per cent of the group in 1957, but only 37.4 per cent of the group in 1962. There was a slight rise, also, in the percentage of fathers who had more than a high school education—from 12.2 to 14.9 per cent.

Table 13 contains similar information about the girls' mothers. Data were available on 98 mothers of the 1957 girls and on 161 mothers of the 1962

TABLE 13
HIGHEST SCHOOL GRADES COMPLETED BY MOTHERS
OF GIRLS ADMITTED TO BOOTH HOSPITAL
IN 1957 AND 1962

1957			1962		
No education	2	0	Grade 11	9	19
Grade 1	0	0	H. S. graduation	26	63
Grade 2	0	0	Business college	3	3
Grade 3	1	0	Beauticians' school	1	2
Grade 4	0	0	Nurses' training	1	1
Grade 5	1	2	College, one year	4	8
Grade 6	1	1	College, two years	4	5
Grade 7	0	2	College, three years	0	1
Grade 8	31	26	College graduation	2	1
Grade 9	4	7	Graduate school	0	2
Grade 10	8	18			
			Totals	98	161

SUMMARY IN PERCENTAGES		
	1957 Per Cent	1962 Per Cent
Completed no more than elementary grades	36.8	19.3
Attended high school, but did not graduate	21.4	21.1
Graduated from high school	26.5	39.1
Continued formal education beyond high school	15.3	20.5
	100.0	100.0

girls. Among the girls' mothers, too, there seems to have been an improvement in educational attainment. In 1957 there were only 26 (26.5 per cent) high school graduates, but in 1962 there were 63 (39.1 per cent). In 1957 there were only 10 who had had some college, but in 1962 there were 17 who had had some college work.

Table 14 shows the occupational groupings of the fathers of girls admitted in 1957 and 1962. It will be noted that almost half—42.1 per cent in 1957 and 43.7 per cent in 1962—were skilled workers. The percentage of farmers was almost identical in the two groups—16.7 and 17.2. Laborers, including farm laborers, comprised 13.2 per cent of the group in 1957, and 10.7 per cent in 1962.

TABLE 14
OCCUPATIONS OF FATHERS OF GIRLS ADMITTED TO
BOOTH HOSPITAL IN 1957 AND IN 1962

	1957		1962	
	No.	Per Cent	No.	Per Cent
Skilled workers	48	42.1	66	43.7
Farmers	19	16.7	26	17.2
Owners or managers of busi- nesses	16	14.0	26	17.2
Laborers (including farm) .	15	13.2	16	10.7
Professional men	8	7.0	7	4.6
No occupation (retired or disabled)	8	7.0	10	6.6

Eighty-five (69.7 per cent) of the girls' mothers were not gainfully employed, according to the 1957 study, and 103 (64.4 per cent) of the 1962 girls' mothers did not work outside of the home. Thus a majority of the mothers were not working women. Those who were wage-earners were factory workers, waitresses, practical nurses, office workers, registered nurses, teachers, etc.

THE GIRLS' MARITAL STATUS, OTHER CHILDREN
AND RELIGION

In both years, most of the girls were white. The non-whites comprised 9.6 per cent of the group in 1957, and 6.3 per cent of the group in 1962.

As regards marital status, the girls included every possibility—single, divorced, separated and married. The majority were single: 132 (85.8 per cent) in 1957, and 159 (92.4 per cent) in 1962. The next largest group were the divorced: 20 in 1957 and 10 in 1962. In 1957 one had been widowed by death, and one was currently married. In 1962 there were two who still were married, and one who was separated. Each of the married women had sought admittance to Booth because her husband was not the father of her unborn child.

In both groups, more than four-fifths of the girls had had no children previously—81.6 per cent in

1957, and 84.3 per cent in 1962. In 1957, each of 24 girls had had one child previously, two had had two children each, one had had three, and one had had four. Of the 1962 girls, each of 21 had had one child previously, four had had two each, one had had three, and one had had four. In some instances, of course, the girls' previous children had been born legitimately.

At the intake interview, each girl is asked to name the church she attends or of which she is a member. In 1957 only one girl answered "None," and in 1962 just five girls said they attended no church. In both years, 15 denominations were named. To what degree they or their families participated in church activities was not investigated.

THE GIRLS SEEM TO CONSTITUTE A RANDOM
SAMPLING

There is no program for routine mental testing at Booth. When it seems that the information that such a test reveals would be valuable to have, the girl's social worker arranges for her to take a test. However, when one reviews the tables showing the girls' educational attainments and the jobs they have held, he concludes that the group appears to resemble the general population in ability. Records show that in their own schools some of the girls had been leaders in various activities—academic work, sports, music, journalism. The employed girls seemed to have performed satisfactorily in their jobs; indeed, some were to return to the jobs they had held previously. From personal experience, the writer can report that each year the girls' performances as students vary from poor to excellent, just as do those of unselected students, but for lack of documentation she is not prepared to present tables of ability categories.

THE GIRLS' PLANS FOR THEIR BABIES

As stated previously, there were 129 live births to the girls who were admitted to Booth in 1957 and who were delivered there; in 1962 there were 147 live babies. At admission, each girl is asked what plan she has made for her baby. She may be undecided, or she may have made up her mind to release the infant for adoption or to keep it. Before she is discharged, however, she must have made a final plan for her baby, though that final plan need not be the one that she had upon admission. The alternatives are: (1) keep the baby; (2) release it for adoption; and (3) release it for boarding care. Boarding care may be chosen by a girl who needs more time in which to choose between the two other arrangements, or by one who plans to keep her baby but cannot have the infant with her at the time she is ready to leave the institution.

Table 15 shows the plans stated at admission and

the final plans decided upon at discharge by the girls who were admitted to Booth in 1957 and in 1962 and who were delivered of live babies there. In 1957, of the 89 girls who had said at admission that they planned to release their babies for adoption, only 69 (77.5 per cent) actually did so. Thus, almost one out of four changed her mind after she was delivered. In 1962, however, of the 113 girls who originally planned to release their babies for adoption, 106 (93.8 per cent) actually signed releases. In both years, 12 girls said at admission that they would keep their babies, and in 1957 all

TABLE 15
PLANS FOR THEIR BABIES MADE BY GIRLS WHO WERE
ADMITTED TO BOOTH IN 1957 AND IN 1962,
AND WHO WERE DELIVERED THERE

Tentative Plan at Admission			Final Plan at Discharge		
			1957		
Plan	Number	Per Cent	Adop- tion	Keep- ing	Board- ing
Adoption	89	69.0	69	15	5
Keeping	12	9.3	0	12	0
Undecided	28	21.7	19	6	3
Totals	129	100.0	88	33	8
			(68.2%)	(25.6%)	(6.2%)
			1962		
Plan	Number	Per Cent	Adop- tion	Keep- ing	Board- ing
Adoption	113	76.9	106	4	3
Keeping	12	8.1	3	9	0
Undecided	22	15.0	10	9	3
Totals	147	100.0	119	22	6
			(81.0%)	(15.0%)	(4.0%)

12 did so; in 1962, three of the 12 placed their babies for adoption and nine kept theirs. The "undecided" girls were more numerous in 1957 than in 1962—28 as against 22. Nineteen of the 28 in the 1957 group eventually chose adoption, six kept their babies and three used boarding care. Of the 22 who were undecided on admission last year, 10 chose adoption, nine kept their babies and three used boarding care.

These data suggest that before delivery the illegitimately pregnant girl is not prepared to make final plans for her baby. Some of these girls apparently were not ready to decide even after they had delivered, for they secured boarding care for their babies. These figures suggest also that there may be a trend toward adoptive placement. Whereas only 68.2 per cent of the girls chose adoptive placement in 1957, as many as 81 per cent of them made that choice in 1962.

CONCLUSIONS

On the basis of this study, three conclusions seem inescapable:

1. The incidence of unwed motherhood, both in actual numbers and in ratio of illegitimate births to total live births, is increasing both in the nation and in Iowa. The problem seems not to be quite so serious in this state as it is in some of the others, but in 1962 the known group of Iowa's unmarried mothers was a sizeable one—1,637 individuals.

2. A large share of unmarried mothers—perhaps 40 per cent—are under 18 years of age.

3. There is no "typical" unwed mother. Indeed, Clothier's description of such a woman seems entirely correct: "She is many women. She may be feeble-minded or highly intelligent. She may be at the end or at the beginning of her childbearing period. She may come from a background of apparent security and wealth or she may have had no home she could call her own."⁴

The investigator is aware that this presentation raises, rather than answers a number of important questions: Were the "intact" homes from which the majority of these girls came truly happy ones? Was there mutual confidence and affection between the parents and children there? Did the girls' siblings characteristically get into roughly comparable difficulties? Did these girls engage actively in church groups and other organizations intended, more or less specifically, to contribute to their upbringing, or were they, generally speaking, youngsters whom those organizations missed?

Vincent⁵ has reported upon the most ambitious study of this sort that has thus far been undertaken. He has found tentative answers to these and other questions, and has pointed the way for further investigation. Thus, his report deserves the attention of everyone who is interested in this problem.

The Iowa study that has been reported in this paper indicates that the problem cannot be dismissed as being of such minor proportions locally as to be unworthy of serious consideration. At the very least, 1,637 girls, an equal number of male partners, their respective sets of parents, and the infants that are the products of their illicit relationships—all these were directly involved in this social problem last year in Iowa, and probably equal or greater numbers will be involved in this and each succeeding year.

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3. Bureau of the Census: Release PC(1)-C, 1960.
4. Clothier, F.: Unmarried mother of school age as seen by psychiatrist. *Mental Hygiene*, 39:631-646, (Oct.) 1955.
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The Child-Abuse Problem in Iowa

The Extent of the Problem, and a Proposal for Remedying It

A SURVEY RECENTLY completed by the State Department of Social Welfare and the State Department of Health has revealed that an alarming number of Iowa children are subjected to serious physical abuse by their parents or by others entrusted with their care. Because such abuse has been inflicted again and again, in many if not in most instances, and because it usually has severe emotional effects, prompt and effective action is essential.

This Iowa study substantiates national reports that many children are admitted repeatedly to hospitals for the treatment of parentally-inflicted fractures and other injuries, and that some of them sustain permanent injuries or die as a result.

The Iowa cases tabulated below include only those made known to child-welfare workers and public health nurses within the six-month period October 1, 1962, through March 31, 1963. Cases which reached the courts directly or which were merely suspected and are currently under investigation were not counted. The 43 cases involved 71 children in 28 counties, as follows:

CHILD-ABUSE VERIFIED BY WELFARE WORKERS AND PUBLIC HEALTH NURSES

IOWA, OCTOBER 1, 1962, TO MARCH 31, 1963

County	Children	County	Children
Appanoose	1	Kossuth	2
Black Hawk	4	Linn	4
Buena Vista	2	Marshall	4
Cherokee	2	Pocahontas	1
Clay	9	Polk	2
Clinton	1	Pottawattamie	1
Crawford	3	Scott	6
Dallas	1	Sioux	1
Dickinson	1	Story	8
Dubuque	1	Tama	1
Fayette	1	Wapello	2
Guthrie	3	Winneshiek	1
Humboldt	1	Woodbury	2
Jackson	3	—	—
Johnson	3	TOTAL	71

The severe mistreatment of children is not a new problem; it has existed always. During the late 1800's there were societies for the prevention of cruelty to children in a number of Iowa cities such as Dubuque, Des Moines, Davenport, and

Waterloo. At that time the mode of abuse in many instances was overwork. That form of mistreatment is rare nowadays, but irrational punishment and outright sadism are all too common. The forms of maltreatment that have been reported include very severe beatings, resulting in multiple bruises over the body in 31 cases, broken bones in 6 cases, severe head injuries including skull fractures in 9 cases; permanent blinding of an infant in 1 case; and scalding, burning with matches, and neglect and severe malnutrition in the other instances. Seven of the children died of their injuries. Some of these abused children were members of families in which older youngsters had died of injuries plus neglect, but those siblings were not counted in this study. With only one exception, all reported cases involved legitimate children.

Although neglect was not, in itself, regarded as justification for including a child in this enumeration, it was a significant factor in some of the cases of physical injury. It sometimes consisted of failure to secure medical care for the injured child; in other instances it consisted of denying food to children, by way of punishment, over such long periods of time that malnutrition developed; and in one instance it consisted of locking a child outdoors in the wintertime, so that he froze his feet. In some cases, inadequate but well-intentioned parents had failed to provide even for the minimum needs of the children, either because of a lack of resources or because of a misuse of what they had available. A few families were receiving public aid, but were not spending it for the benefit of the children. Gross parental immaturity, intoxication, mental illness and other factors accounted for other cases of neglect that had serious consequences.

CAUSES—SUSPECTED OR ESTABLISHED

It is very difficult to establish causation in cases of child abuse, for most such victims are toddlers too young to speak for themselves. The parents offer quite illogical explanations, or deny having any idea of how the injuries occurred. For instance, an infant boy had had both eyes blackened at the age of two months, a leg broken at three months, and a skull fracture and concussion at five months. The black eyes were said to have appeared "for no known reason," and explanations

offered for the latter of the injuries were that he had fallen downstairs, from a davenport, and against a chair. At that point, he was removed to foster care.

Several of the children were found to be subnormal or handicapped, and it appeared that their parents could not tolerate their disabilities. One retarded child had suffered a broken back and leg before she came to the attention of a child welfare worker for multiple new fractures of her fingers and arms.

The information reported in the survey indicated that most of the abusive parents were very immature emotionally, and that many of them were very young chronologically. Many of the mothers were school drop-outs and teenagers, at least at the time of marriage, and had no idea of how to care for a child. One 15-year-old married mother who had been reported by her relatives for abusing her baby said she couldn't stand his crying and had beaten him to make him stop. One 20-year-old mother had sent her infant son to the hospital twice in his first three months of life, first with a crushed chest and broken ribs, and later with broken arms.

Some of the fathers were also teenagers. Several were no longer in the home, as a result of divorce, and others were in need of treatment for mental disorders. A few reports indicated that marital difficulties had been "taken out on the children." In some instances, fathers who had been left in charge of their children while their wives earned the family's living were responsible for severe injuries. One such man said he didn't know why he had been cruel to his children, but his behavior may have been either a conscious or unconscious rebellion against the extraordinary role that he had accepted.

MEASURES NOW BEING TAKEN

Besides securing immediate medical care for such children, child-welfare workers and public health nurses are working very closely with these disturbed parents and are guiding those of them who can respond. Some of the parents have volunteered that they cannot love their children, and have consented to their being placed in foster care. Others are accepting treatment at mental health clinics. A few have been hospitalized at the mental health institutes. Court action has removed 17 of the children from their parents' custody, and has placed them in good foster-family care. Some of the very young children were already so severely upset emotionally, at the time of removal from their parents' custody, that they were "wasting away" and appeared mentally retarded, but after being placed in foster homes, they blossomed out into normal, charming youngsters.

In every instance in which it seems that no dire emergency exists, social workers and/or public

health nurses make every effort to improve conditions so that the children can remain with their parents in safety. In one case where a handicapped child had been cruelly treated, a social agency was able to suggest a means of rehabilitation, and the parents' rekindled hope made their home a pleasanter place in which to live. After receiving welfare and psychiatric services, one mother divorced her husband, who the psychiatrist believed could never be enabled to function in a parental capacity. As for the family previously mentioned, in which the father had proved a horrible babysitter, a child-welfare worker and the staff of the mental health clinic brought the children's mother to the realization that her husband had a deep-seated need to be the breadwinner.

LEGISLATION IS CALLED FOR

As yet, problems of these sorts are nowhere near a solution. Indeed their extent is doubtless far greater than has been indicated by the figures tabulated here. An editorial in the July 7, 1962, issue of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION declared that when the facts about parental abuse become more adequately known, "It is likely that it will be found to be a more frequent cause of death than such well recognized and thoroughly studied diseases as leukemia, cystic fibrosis and muscular dystrophy, and it may well rank with automobile accidents . . . [as a cause] . . . of acquired disturbances of the central nervous system."

Physicians, teachers, hospital personnel, and others must be enabled and encouraged to help policemen, judges, probation officers, social workers and public health nurses in case-finding. Schools reported some of the youngsters who have been included in this survey, and social workers found them so damaged and uncared for that they arranged for their placement in foster homes. The majority of maltreated children, however, are of pre-school age, and the doctors and general duty nurses who examine and care for them hesitate to voice their suspicions about parental abuse, since by doing so they lay themselves open to possible legal action either for disclosure of a privileged communication or for slander. In Iowa there is neither a requirement that possible instances of child abuse be reported, nor any special legal protection for the doctors or hospital personnel who take such action. Child abuse or neglect is difficult to prove, and whatever suggestions doctors and nurses now make in that regard usually are whispered to a social worker or a county nurse.

A prompt and thorough investigation is always desirable, lest other children in the family be hurt or lest the child just treated in the hospital or doctor's office be returned home for still more injuries, but hasty action is impossible except in extreme cases. In a few instances in this survey,

children suffered additional harm while efforts were being made to help their disturbed or otherwise inadequate parents.

THE CHILDREN'S BUREAU HAS PROPOSED A MODEL STATUTE

The United States Children's Bureau has proposed a uniform act for the consideration of state legislatures, by which doctors and hospitals might be required to report all such cases and might be relieved of legal liability for so doing. In addition, if adopted, this measure would permit husbands and wives to testify against each other, in order to lay essential evidence before the court in cases of this kind.

The proposed statute, printed below, was developed by the Children's Bureau in conjunction with the Office of the General Counsel of the U. S. Health, Education and Welfare Department. The findings on which it is based had been reviewed by doctors, lawyers, social workers, juvenile court judges, hospital administrators and interested citizens. Commenting on the purpose of the proposed act, Mrs. Katherine B. Oettinger, chief of the Bureau, says: "We need to have these children identified if they are to be helped. Until we have mandatory reporting of child abuse cases, the hands of such agencies as the courts and welfare departments, equipped to help protect the child, are tied when child-abuse cases are listed as 'accidental.'"

PROPOSED ACT FOR THE MANDATORY REPORTING BY PHYSICIANS AND INSTITUTIONS OF CERTAIN PHYSICAL ABUSE OF CHILDREN

1. *Purpose.* The purpose of this Act is to provide for the protection of children who have had physical injury inflicted upon them and who are further threatened by the conduct of those responsible for their care and protection. Physicians who become aware of such cases should report them to appropriate police authority, thereby causing the protective services of the State to be brought to bear in an effort to protect the health and welfare of these children and to prevent further abuse.

2. *Reports by Physicians and Institutions.* Any physician, including any licensed doctor of medicine, licensed osteopathic physician, intern and resident, having reasonable cause to suspect that a child under the [maximum age of juvenile court jurisdiction] brought to him or coming before him for examination, care or treatment has had serious physical injury or injuries inflicted upon him other than by accidental means by a parent or other person responsible for his care, shall report or cause reports to be made in accordance with the provisions of this Act; *provided* that when the attendance of a physician with respect to the child is pursuant to the performance of services as a member of the staff of a hospital or similar in-

stitution he shall notify the person in charge of the institution or his designated delegate who shall report or cause reports to be made in accordance with the provisions of this Act.

3. *Nature and Content of Report: to Whom Made.* An oral report shall be made immediately by telephone or otherwise, and followed as soon thereafter as possible by a report in writing, to an appropriate police authority. Such reports shall contain the names and addresses of the child and his parents or other persons responsible for his care, if known, the child's age, the nature and extent of the child's injuries (including any evidence of previous injuries), and any other information that the physician believes might be helpful in establishing the cause of the injuries and the identity of the perpetrator.

4. *Immunity from Liability.* Anyone participating in good faith in the making of a report pursuant to this Act shall have immunity from any liability, civil or criminal, that might otherwise be incurred or imposed. Any such participant shall have the same immunity with respect to participation in any judicial proceeding resulting from such report.

5. *Evidence not Privileged.* Neither the physician-patient privilege nor the husband-wife privilege shall be a ground for excluding evidence regarding a child's injuries or the cause thereof, in any judicial proceeding resulting from a report pursuant to this Act.

6. *Penalty for Violation.* Anyone knowingly and willfully violating the provisions of this Act shall be guilty of a misdemeanor.

RECENT PUBLICATIONS

1. *The Abused Child—Explanation of the Proposed Reporting Law, With a Background Statement.* Washington, D. C., Government Printing Office, 1963, 13 pp., 10c.

2. *The Neglected Battered-Child Syndrome—Role Reversal in Parents.* New York, Child Welfare League of America (345 E. 46th Street), July 1963, \$1.00.

Section Headings:

"Who Insures the Child's Right to Health?"

"Malidentification of Mother-Baby-Father Relationships Expressed in an Infant's Failure to Thrive"

"Role Reversal: A Concept in Dealing With This Syndrome"

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Clinical Pathologic Conference

CLINICAL SUMMARY

A 39-YEAR-OLD WHITE HOUSEWIFE was admitted to the University Hospitals with difficulties that had started three weeks before entrance, when a severe steady pain in her right shoulder awakened her from sleep. She stated that she had eaten a butterscotch sundae earlier that evening. She had no previous history of food intolerance of any kind. The pain radiated into the right arm and into the right upper abdominal quadrant. Nitroglycerin and milk of magnesia did not relieve the pain. Morphine gave complete relief. Vomiting had occurred on the following two days. For nausea she was given a salt solution by mouth without relief. Phenobarbital was then tried but failed, and relief was finally provided by tranquilizers. One week after the attack she had noted swelling of her legs, abdominal distention and dyspnea, and a "shot" by her physician had partially relieved the swelling. During this period her urine was scanty and darker than usual. Stools were clay-colored for a short period. The patient had gained 10 pounds in weight during the previous year. An episode of rheumatic fever, which she had had at age 13, had been treated by bedrest. A bout of jaundice seven years before admission had been diagnosed as hepatitis. Subtotal thyroidectomy had been carried out 14 years before admission, for treatment of thyrotoxicosis.

Significant physical findings were a blood pressure of 180/90 mm. Hg, a pulse of 110/min., and a body weight of 225 pounds. P2 was greater than A2. The left and right ventricles were 1+ overaccessible. A gallop rhythm was present. A harsh, grade II medium-pitched holosystolic murmur was heard at the apex and in the left axilla. One observer heard an apical diastolic murmur. The epigastrium was tender on palpation, and the liver edge was just palpable below the right costal margin. Two-plus pretibial edema was present.

The patient was treated with digitalis. A cholecystogram revealed multiple large, faceted gallstones and a gastrointestinal series was interpreted as normal. A roentgenogram of the chest suggested left ventricular prominence and clear lung fields. An electrocardiogram showed incomplete right

bundle branch block, possible right ventricular hypertrophy and possible atrial disease. Examination of the urine showed 1+ albumin and 6-8 white cells per high power field. The hemoglobin level was 12.1 Gm. per cent, with a white blood cell count of 16,450/cu. mm. and a blood smear that showed 72 per cent neutrophils. The serum cholesterol was 145 mg. per cent. The serum bilirubin was 0.25 mg. per cent direct and 0.8 mg. per cent total. The patient was discharged on digitalis and chlorothiazide and on a reducing diet in preparation for an elective cholecystectomy.

She returned to the hospital one month later with a history of otitis media and rupture of the right tympanic membrane. She had also noted pedal edema, abdominal enlargement and a productive cough, but complained of no chest or abdominal pain. Physical examination revealed a blood pressure of 120/60 mm. Hg, and a pulse rate of 88 per minute. The right tympanic membrane was deformed. The neck veins were slightly distended, and the hepatojugular reflux was negative. The lungs were clear. The point of maximum cardiac impulse was 2 cm. to the left of the mid-clavicular line. The apical systolic murmur was unchanged. M1 was normal, and P2 was louder than A2. A diastolic gallop was present. No opening snap or diastolic murmur was heard. The liver was felt to be slightly enlarged, and one observer palpated the tip of the spleen. One-plus pretibial edema was present, and shifting dullness was noted in the abdomen.

The venous pressure was 240 mm. of saline, and the arm-to-tongue circulation time was 65 seconds. A roentgenogram of the chest showed clear lung fields with some neovascularity, a prominent pulmonary artery, enlargement of the right ventricle and left atrium, and probably left ventricular hypertrophy. Urinalysis showed 2+ to 4+ proteinuria, with 5-10 white cells per high power field. The hemoglobin was 12.7 Gm. per cent, and the leucocyte count was 8,000/cu. mm. with 6 per cent band polymorphonuclears and 54 per cent segmented polymorphonuclears. The sedimentation rate was 20 mm./hour, and the blood urea nitrogen and creatinine levels were normal. The admission electrolytes were normal, except for a chloride of 86

mEq/L. The serum albumin was 3.1 and the globulin 3.8 Gm. per cent. The serum cholesterol was 124 mg. per cent. The alkaline phosphatase, bilirubin, transaminase, and thymol turbidity were normal. The cephalin flocculation was 1+ and 3+, the zinc flocculation 11.3 units and the prothrombin time 16.4 seconds, with a control of 13.6. The C-reactive protein was 2+. The bleeding time was 10 minutes, and the Lee-White coagulation time 7 minutes, 30 seconds. One blood culture grew *Staphylococcus epidermidis* and micrococcus. A throat swab culture grew a normal flora. The blood sugar levels were normal. The rectal temperature remained at 100°F.

After receiving a topical anesthetic for examination of the nasopharynx, the patient had a choking sensation and dull pain superficially, located in the left side of her chest anteriorly as well as in both arms and in the back. This pain was accompanied by weakness and diaphoresis. The pulse rate was 128/min. and the blood pressure was 130/80 mm. Hg. The pain subsided 15 minutes after injection of Diphenhydramine hydrochloride (Benadryl). She had mild recurrence of the pain later that evening. The next day the electrocardiogram showed no change and the transaminase level was normal. One week after admission, she was started on heparin, 50 mg. subcutaneously, every six hours.

Nine days after admission the patient was seen to be lethargic. The lungs were clear to auscultation. The pulse was 90/min. The hepatojugular reflux was slightly positive, and pedal edema was 1+. She complained of no pain. She had lost 8 pounds since admission to the hospital. In the afternoon, after an enema and while seated on the bed pan the patient died. External cardiac massage and use of the defibrillator proved unsuccessful.

Dr. William E. Connor, Internal Medicine: Mr. Eldon Reed will present the consensus of the junior ward clerks.

Mr. Eldon Reed, junior ward clerk: We thought that the initial episode of pain which was relieved by morphine must have represented either angina, peptic ulcer (with or without perforation), or gallbladder disease. The latter of these we regarded as the most likely. We felt that the episode of clay-colored stools probably represented the passage of a gallstone.

The heart findings are compatible with rheumatic heart disease, but we could not exclude thyrotoxicosis. The palpable liver and pretibial edema plus the heart murmurs probably represented congestive heart failure secondary to rheumatic heart disease. The 1+ albumin and white cells in the urine in the presence of an increased white count made us think of the following: pyelonephritis, cystitis, biliary tract infection, systemic lupus and subacute bacterial endocarditis (SBE). However, we would expect gross or micro-

scopic hematuria in systemic lupus and SBE. The increased white count could also have been due to an overlooked ear infection for which the patient later sought medical attention. We should like to know the appearance of her sputum to help us decide whether congestive heart failure or a possible pneumonic process was present when the patient returned one month later. One feature which impressed us in the protocol was the fact that despite the dyspnea and a productive cough, the lungs remained clear at all times. Then we tried with considerable difficulty to fit systemic lupus into the picture of cardiac, kidney, spleen and liver involvement. The increased venous pressure, the increased circulation time and the x-ray evidence suggested mitral disease—namely, mitral stenosis and insufficiency. The urinalysis revealed an increased proteinuria and white blood cells, yet a decrease in the total white cell count over the previous admission. This would tend to rule out the genitourinary tract as a cause of infection. The abnormal liver function studies as well as the proteinuria could be explained merely as passive congestion due to heart failure or SBE. The 2+ C-reactive protein probably represented a cholangitis, SBE or myocardial infarction. The positive blood culture suggests contamination or an uncommon form of SBE, but we could not explain the fact the patient remained afebrile at all times. The patient had a reaction, probably to the topical anesthetic during bronchoscopy, and it was relieved by Benadryl. The only reasons for use of heparin we could think of were either a myocardial infarction or the fact the patient was passing emboli. The final episode probably represented either an infarct or rupture of an aneurysm of the heart, and/or an embolus passed to the brain.

Our final diagnoses were: cholecystitis with cholelithiasis, and congestive heart failure secondary to rheumatic heart disease. The patient probably had a myocardial infarction terminally, with SBE a good possibility.

Dr. Connor: Thank you, Mr. Reed. Are there any questions to be directed to Mr. Reed?

Dr. L. E. January, Internal Medicine: Didn't the fact that the electrocardiogram was normal, or at least unchanged, bother you, if you were going to bring in the diagnosis of myocardial infarction?

Mr. Reed: Yes, it did. There were several other points that bothered us too.

Dr. Connor: We'll now see how Dr. Theilen handles this case, one which is completely unknown to him.

Dr. E. O. Theilen, Internal Medicine: Whenever one approaches a problem of this type, it is interesting to attempt to make all of the bits of information fit one diagnosis. I am not sure that I can do so. Certainly when confronted with the problems presented by this patient, one cannot be dogmatic in any statement.

Certain facts are rather troublesome in this

case. Reading through this protocol initially and rather hurriedly, I thought it seemed rather straightforward. The patient had gallbladder disease. She had rheumatic heart disease. She probably had cystic or common bile duct obstruction, temporarily, from a gallstone. Perhaps as a result of the associated stress, she fell into congestive heart failure because of her rheumatic heart disease, and then died while performing a Valsalva maneuver on a bed pan. I do not think this was the chain of events, however, for several reasons. First of all, let us consider the initial episode. She awakened in the middle of the night with pain in the right upper quadrant of the abdomen and pain in the shoulder which I presume was probably in the scapular region. What should we think of? This woman was obese, and she probably had had several pregnancies, although I don't think the protocol mentioned them. She would have been a good candidate for gallbladder disease, and later on we find, in fact, that she did have gallstones. It is rather odd there were no comments about previous difficulties or symptoms referable to the gallbladder. What else could have produced this sort of pain? The pain radiated into her right arm. To the best of my knowledge, gallbladder pain will radiate to the shoulder, particularly to the scapular region, but I am not aware that pain will radiate into the right arm from biliary colic. Certainly if this were coronary disease, it might. It is a bit unusual to have pain in the right upper quadrant and right arm associated with coronary artery disease, but it does sometimes occur in the right arm and not in the left arm. Coronary artery disease would be most unusual in a 39-year-old, premenopausal, presumably euthyroid, non-diabetic, and non-hypertensive woman. Only one somewhat elevated blood pressure reading was recorded in this patient. It is possible that she could have had some disturbance of fat metabolism, and she might well have been hyperlipemic. If she was hyperlipemic, she certainly didn't have hypercholesterolemia. I think that up to this point I could not seriously consider the possibility of coronary heart disease, and certainly would be more suspicious of gallbladder disease. A pulmonary embolus should also be considered, but radiation of the pain into the arm would again be unusual, and to have pain of such severity not associated with respiratory distress would be unlikely. I should tend to discount pulmonary embolism at this point. Furthermore, the nausea and vomiting which she had for several days rules against the possibility of pulmonary embolus, unless she also had other symptoms. Reconsidering that she might have had coronary disease, I wouldn't expect the nausea and vomiting to persist over several days. I should say that probably she had gallbladder disease.

One week after this attack she developed signs of congestive heart failure. This is rather strange.

A bit later in her history I find that she had only a grade II medium-pitched holosystolic murmur. Apparently it wasn't very impressive. There was an apical diastolic murmur, but again this apparently was not a very impressive thing. I would gather that this was a low-pitched rumble. Was it a low-pitched rumble of mitral stenosis or not, Dr. Connor?

Dr. Connor: It was a low-pitched rumble.

Dr. Theilen: Then the murmur was compatible with some degree of mitral stenosis. The patient developed rather severe congestive failure approximately one week after her attack. She did have some dyspnea. It is unusual for a woman to go into rather severe congestive failure such as this without having experienced a few symptoms beforehand, such as some limitation of her ability to do housework, but this is not mentioned.

If she suddenly developed signs of heart failure, what else could have been going on? The possibility of pulmonary emboli comes to mind again, and this could account for her pains as well as for signs of congestive failure coming on rather promptly and progressing rather rapidly. I may have to rule it out later, depending upon what the cardiogram and the roentgenograms show.

The patient's blood pressure was elevated slightly to 180/90 mm. Hg. I do not think this single reading is particularly helpful. It doesn't mean that she had hypertension. Many patients who are in congestive heart failure will have some elevation of blood pressure, but it will fall again as they recompensate. Sometimes it goes up to levels considerably greater than 180/90. Her pressures did in fact come down to about 120/60 a little later.

She had some signs of increased pulmonary artery pressure, as evidenced by an accentuated pulmonary second sound at the age of 39. Her ventricles were a little overaccessible, and thus in view of the fact that she weighed 225 pounds, her heart must have been quite overactive. I would be surprised if you could feel very much. In a patient who is as obese as this woman, it is sometimes rather difficult to do an adequate cardiac examination because of excess adipose tissue.

I wonder whether I might see the roentgenograms now. The protocol states this woman had some left ventricular enlargement, and I should like to know whether this was truly left ventricular enlargement or whether this was simply a transverse heart.

Dr. E. F. Van Epps, Radiology: I have reviewed the previous roentgenograms on this patient. It is true that we have evidence of a poorly functioning gallbladder, with multiple faceted calculi.

I shall now present the chest roentgenograms. The initial film revealed hypoventilated lung fields and a transverse type of heart, originally read as showing left ventricular hypertrophy. There was nothing to indicate the presence of pulmonary congestion.

I want to take this opportunity to state that a single roentgenogram of the chest does not give all the answers our clinicians request, as regards the size of the cardiac chambers. In addition to the posterior anterior projection, we need to have left anterior oblique and lateral films for this purpose. The following three films consist of the PA, LAO and lateral films, and I shall take them up singly. First the PA film: The heart is at the upper limits of normal in transverse size. In addition there is prominence of the pulmonary artery segment. The aortic knob is not prominent. From this view only, I should suspect right ventricular enlargement.

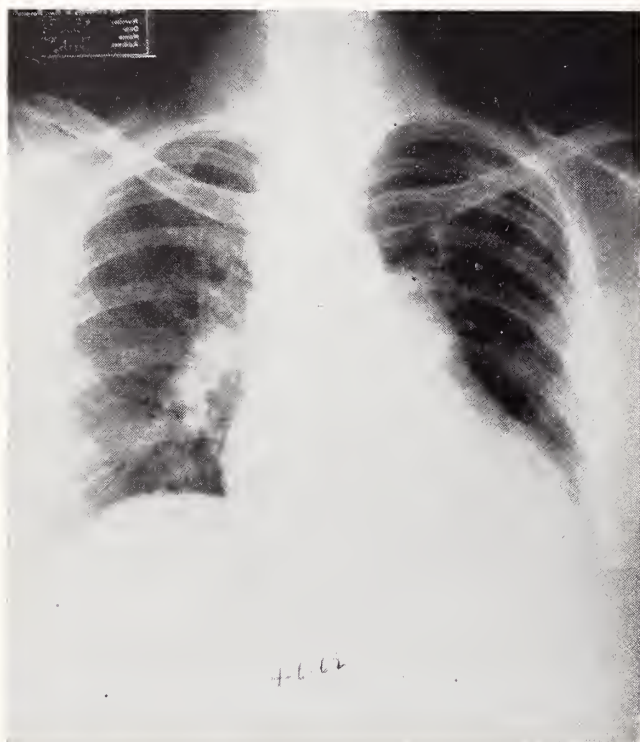


Figure 1. PA chest film. Enlargement of the pulmonary arteries, PA segment and cardiac enlargement.

Dr. Theilen: It looks to me as though the lung markings on the left side are not nearly so prominent as on the right. In your opinion, is there any evidence here of occlusion of the left branch of the pulmonary artery?

Dr. Van Epps: No. This is a frequent phenomenon for which I have no adequate explanation. We have tried to relate it to large pectoral muscles and to other soft tissue changes, but this explanation is not correct in most individuals. In answer to your question, Dr. Theilen, I can only state that I do not believe there is any ischemia of the left upper lobe, such as one would expect to find in a pulmonary embolus without infarction.

The second slide is the LAO view. There is elevation of the left main bronchus by left atrial enlargement, right ventricular enlargement in the

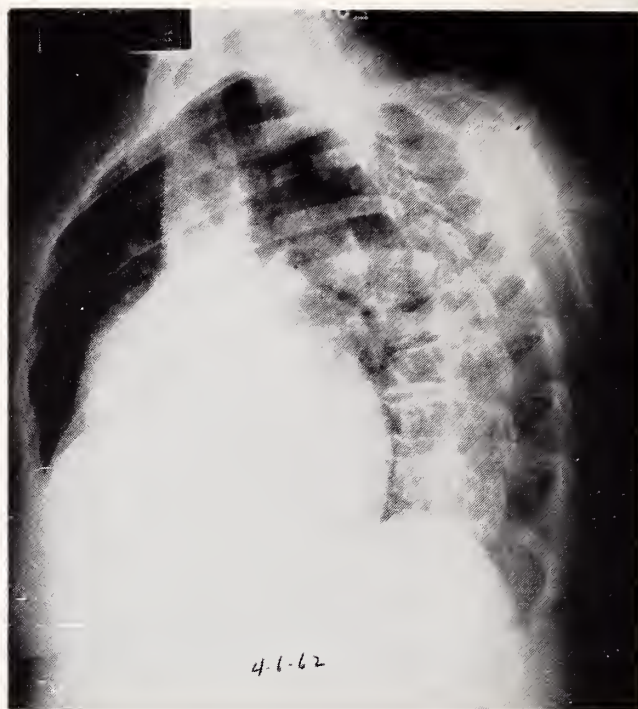


Figure 2. LAO 2+ right ventricular enlargement, elevation of left main bronchus, minimal left ventricular enlargement.

grade of 2+, and only a mild degree of left ventricular enlargement.

The third slide is the lateral projection. There is retrosternal encroachment by the pulmonary artery and right ventricle, posterior displacement of the left main bronchus, and slight enlargement of the left ventricle. It is my impression that this

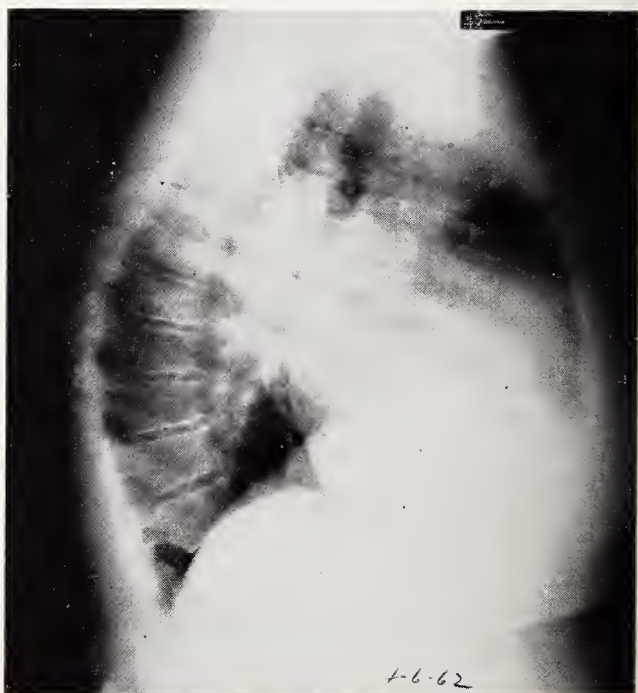


Figure 3. Lateral view. Enlarged pulmonary arteries, retrosternal encroachment by right ventricular and pulmonary artery enlargements.

patient had rheumatic heart disease, with mitral stenosis as the dominant lesion. Whether there was an associated mitral insufficiency and/or aortic valve disease, I cannot state from these films. I believe that further important information about cardiac dynamics could and should have been obtained by cardiac fluoroscopy. This was not done in this patient.

Dr. Theilen: Considering the chamber enlargement which you described, it would seem that one would not necessarily have to implicate rheumatic heart disease in this patient. Couldn't this be generalized cardiac enlargement for a number of other reasons?

Dr. Van Epps: No. As I interpret these films, I would state that there is definitely more ventricular enlargement on the right than on the left, and that this finding, coupled with the left atrial enlargement, would make me think of rheumatic heart disease, as I've mentioned above.

Dr. Theilen: This is very interesting. Nevertheless, I still do not think there is good clinical evidence for mitral stenosis, and I assume that all the pertinent information is in the protocol. If this woman had mitral stenosis, as Dr. Van Epps suggests, I should like to see her electrocardiograms to find whether or not she did indeed have signs of right ventricular hypertrophy and any significant abnormalities in P-waves. Could I see them now?

Dr. L. E. January, Internal Medicine: No doubt you can interpret these tracings for yourself, Dr. Theilen. The protocol indicates that the electrocardiograms displayed abnormalities attributable to incomplete right bundle branch block, probably right ventricular hypertrophy, and that P-wave changes were present was suggestive of atrial disease. You can see here that there is a conspicuous right axis deviation. The P-waves are broad and notched, and the PR segment is short. This type of P-wave abnormality which has moved in on about half of the PR segment suggests to me that perhaps the one individual who said he heard an apical murmur may have had the best ears of all the people who examined this woman. What do you think?

Dr. Theilen: I'm of that opinion.

Dr. January: Also, this type of notched R-wave in leads with the abnormal R/S ratio, together with a normal QRS duration, indicate to me that there is conspicuous electrocardiographic evidence of right ventricular hypertrophy. I should not say that there was incomplete right bundle branch block. There isn't any evidence whatsoever to indicate left ventricular hypertrophy. Furthermore, in neither tracing is there any evidence of myocardial infarction, and the last one was made the day after the patient described an episode of chest pain.

Dr. Theilen: At first, I thought that this woman might have had a pulmonary embolus because of the electrocardiographic changes mentioned in the

protocol. A patient with a pulmonary embolus can have transient electrocardiographic changes such as the right axis deviation on this tracing. Pulmonary embolism can produce a transient incomplete right bundle branch block, but it won't give rise to monophasic R-waves such as you saw in her cardiogram and certainly wouldn't explain the type of abnormal P-waves that she had.

Dr. Van Epps tells me that she didn't have an ischemic lung field on the left. If she had a pulmonary infarction on the right there might be a little effusion on the right side after a few days. A diagnosis of pulmonary embolus now seems quite remote. I think I would assume, on the basis of the description of the murmurs and on the basis of both the x-ray and electrocardiogram, that this woman did in fact have rheumatic heart disease with mitral stenosis and insufficiency, and I gather from the cardiogram and from the radiographic findings that mitral stenosis may have been predominant.

Is this the whole story? I am not at all sure yet. When the patient returned to the hospital her blood pressure was normal, but her state of cardiac compensation was borderline. Again someone had difficulty hearing a diastolic murmur. The fact that a diastolic murmur wasn't heard on readmission doesn't mean that she didn't have mitral stenosis. A small but significant percentage of patients with severe mitral stenosis sometimes have virtually inaudible murmurs. Because the murmur may vary from day to day, it certainly is worthwhile to reexamine these individuals repeatedly. Now we learn that she had a palpable spleen. If she had rheumatic heart disease, otitis media, and a palpable spleen, did she have subacute endocarditis? Not necessarily. The spleen may have been palpable simply because she was in congestive failure. Unless there are additional findings to go along with the diagnosis of subacute endocarditis, it should not be entertained seriously. Despite the fact that she was digitalized she was still in serious trouble, as evidenced by her elevated venous pressure and prolonged circulation time.

Another thing which is helpful in evaluating her problem is the neovascularity found in the lung fields. Dr. Van Epps, am I correct in my impression that neovascularity in the lung fields is more suggestive of mitral stenosis than of mitral insufficiency? Are you of the opinion that this is due to increased bronchial arterial flow within the lungs?

Dr. Van Epps: Yes.

Dr. Theilen: This would also go along then with mitral stenosis. The fact that the patient had proteinuria could simply be the result of an increased venous pressure. Again, no mention is made of red cells in the urine. I should expect to see a few in at least one of the urinalyses if she had SBE. She apparently had no petechiae. Her rectal temperature was only 100°F., and her white blood cell count was normal. It is perfectly possible to have

a normal white count with SBE, particularly when the organism is an alpha hemolytic streptococcus, but the white count usually is not normal when a staphylococcus is the cause of the infection. Thus, the white count helps only to rule out a staphylococcal infection. A temperature of 100°F. doesn't suggest that this is SBE. Most patients with active SBE which has not been suppressed with antibiotics will have a considerably higher fever. A patient in congestive failure can have this much of a temperature elevation, and I should ascribe this minimal elevation simply to disturbances in heat regulation which occur in a patient in congestive heart failure. I think also that some of the disturbances in the liver function, such as the slightly elevated zinc flocculation, the elevated cephalin flocculation and the slightly prolonged prothrombin time, are simply manifestations of impairment of liver function in a patient who has chronic passive congestion. The staphylococcal epidermidis in the blood culture was probably a contaminant. I should hope that more than one blood culture was drawn. Was this true, Dr. Connor?

Dr. Connor: I think several were drawn.

Dr. Theilen: Now if I remember my old terminology, staph epidermidis is produced by *Staphylococcus albus*, a common contaminant. Subacute bacterial endocarditis from this organism is less common, except in those patients who have had cardiac surgery such as mitral valvuloplasty. The micrococcus was, I presume, what is usually referred to as a micrococcus species. This is usually a contaminant too. The fact that there were two organisms in the same culture suggests that somebody was careless.

What was the episode during the examination of the nasopharynx? She had a choking sensation, a dull pain superficially located in the left side of her chest anteriorly, as well as in both arms and the back. This was associated with weakness, diaphoresis and elevation of pulse rate, but was unaccompanied by a blood pressure change. The physicians who were caring for her thought she had a pulmonary embolus, or at least I assume that is what they were thinking. Since a repeat cardiogram showed no change from the previous one, they probably didn't seriously consider coronary artery disease. Here was an obese woman in congestive failure and bed fast. She did not have obvious thrombophlebitis, but she was nevertheless an excellent candidate for a thromboembolic phenomenon. This could well have been a pulmonary embolus. On the other hand, this could also have been a myocardial infarction, but as I mentioned before, I am reluctant to make a diagnosis of coronary artery disease in this woman because she was premenopausal; she was not hypertensive; she was not diabetic; and she was not hypercholesterolemic or at least was not hyperlipemic. She was not myxedematous; she didn't have any form of arteritis that was apparent. There wasn't

any reason for her to have coronary disease as far as I can tell, and certainly there was nothing on the cardiogram to help with such a diagnosis. If the pathologist tells me this woman had coronary artery disease, I am going to be greatly surprised, for she shouldn't have had anything of that kind according to the information contained in this protocol. The symptoms and findings described during the acute episode associated with the topical anesthetic could have been produced either by a pulmonary embolus or by a myocardial infarct, but I cannot honestly and seriously entertain the latter diagnosis in this patient, though the distribution of pain would certainly fit it.

The mechanism of her death was probably cardiac. This is all too common. It was probably a terminal rhythm disturbance initiated by her performing a Valsalva maneuver, thus stimulating the vagus. The alternative, and I think the less likely possibility, would be the occurrence of another pulmonary embolus while she was on the bed pan.

In summary, I should say this woman had rheumatic heart disease, mitral stenosis and insufficiency, and perhaps congestive failure on this basis, but I am not entirely happy with this diagnosis, again because of the rapidity of its onset. Patients with mitral stenosis and insufficiency do not go into congestive failure suddenly and then die. They usually survive for a long period of time. They have their ups and downs. Thus this patient's course doesn't fit. There must have been something else going on. She could very well have had a pulmonary embolus which, perhaps in addition to her heart disease, might have caused her difficulty. What haunts me is the possibility of coronary disease, but I simply cannot make such a diagnosis in this patient from the information I have.

Dr. Connor: Dr. Theilen certainly gave us a fine discussion. Are there any questions?

Audience: Where were all these emboli coming from?

Dr. Theilen: How tall was this woman?

Dr. Ziffren: 5 ft., 8 in.

Dr. Theilen: Five-eight; 225 pounds. She probably had pretty heavy legs. She could have had phlebothrombosis, and she could have had varices which weren't noticed. More often than not in people such as this—obese bed-ridden patients in congestive failure—you don't know the origin of the pulmonary embolism. The pelvic venous plexus is a source of emboli, as well as the legs.

Dr. Connor: Are there other questions?

Mr. Reed: This patient's symptoms, according to the protocol, were of approximately eight weeks' duration, and the cardiac symptoms were of approximately seven weeks' duration. Do you know whether this patient had had earlier symptoms in reference to the heart?

Dr. Connor: There is no mention of anything in

the chart or in the protocol. Everything about prior cardiac symptoms that was noted in the chart is in the protocol.

Dr. Bean: Was the clinical diagnosis of myocarditis entertained at all?

Dr. Connor: No. at least no mention of it was written down. It is of interest that at one point heparin therapy was initiated because of possible inferior vena caval obstruction.

Dr. Tammes: would you enlighten us about this patient?

Dr. A. R. Tammes, Pathology: At autopsy the main findings concerned the heart, lungs, and liver. The heart was greatly enlarged, weighing 640 Gm., a normal weight being approximately 280 Gm. There was considerable enlargement and hypertrophy of the right ventricle and left atrium. The left ventricle showed some slight enlargement and hypertrophy too. The mitral valve demonstrated both a moderate degree of stenosis and some insufficiency. The valve would admit just the tip of an index finger. The aortic valve showed some stenosis, but of a much milder degree. Both valves were stenotic as a result of scarring and calcific deposits in the valve leaflets. The coronary arteries both showed extensive, severe sclerosis which greatly narrowed the lumens.

The vessels in the rest of the body were essentially normal. They showed no appreciable atherosclerotic changes. The heart muscle itself showed extensive severe ischemic damage in areas of varying sizes. Often these were quite large and showed old scarring. Numerous scattered areas showed muscle death of one to three muscle fibers, often of a more recent nature. These changes were found in both the left ventricle and right ventricle. The impression one gets from looking at the sections is one of widespread, very long-term, progressive ischemic necrosis of the myocardial fibers.

The liver was quite large, weighing 2,750, in contrast to a normal of about 1,600 to 1,700 Gm. The lungs were also slightly heavy, and both showed extensive, severe congestion and edema. There was some collapse of the lungs and much congestion. Some hemosiderin pigment testified to small areas of hemorrhage at a slightly earlier date. The hemorrhage had been there at least long enough to be converted to hemosiderin and engulfed by macrophages. There was also edema of the lungs.

The liver showed extreme congestion and edema on microscopic examination. The architectural pattern was quite distorted by the gross spreading of the cell cords both by congestion and by edema. There were small areas of hemorrhage.

Some other incidental findings included cholelithiasis and mild chronic cholecystitis. The 3rd through the 8th ribs on the left were fractured, as a result of the closed cardiac massage carried out terminally.

Death in this case is attributed to heart failure

on the basis of rheumatic carditis with valvular disease, and the further complication of very severe coronary atherosclerosis with widespread myocardial ischemia.

Before finishing, I should like to ask someone on the medical staff to say a few words about patients of this age and in good hormonal status who have this particular disease.

Dr. Bean: I would like to see Dr. Theilen have his temper tantrum first.

Dr. Theilen: I shall show great restraint. I should like to ask one question: Did anyone here entertain the diagnosis of coronary disease in this patient before death?

Dr. Tammes: Not before death.

Dr. January: You didn't say she had a myocardial infarction, did you?

Dr. Tammes: This is a difficult problem because I have no way to prove how the damage occurred. My impression is that she had experienced anoxia over a long period of time, and that probably the death of the myocardial fibers had been a slow progression. I somehow doubt that this occurred in classical fashion; i.e., as a large area undergoing abrupt necrosis.

Dr. January: You wouldn't suspect from the electrocardiogram that this patient had significant myocardial infarction. From your description of the pathologic findings, there were no large areas of infarction. The infarction was patchy and diffuse in type, and the electrocardiogram notably fails under this circumstance.

Dr. Bean: This is called multiple military infarction to the heart. Whether it is an advantage to use that term or not, I don't know, but certainly the clinical pattern is one that leads to congestive failure rather than to a classical myocardial infarction.

Dr. Francois M. Abboud, Internal Medicine: Did anyone suspect myxedema clinically?

Dr. Connor: It was recorded in the chart by a number of observers. Unfortunately, as far as I can find out, nothing was done about confirming this diagnosis. In other words, a protein bound iodine determination was recommended, but none is reported.

Dr. Bean: She had a relatively low cholesterol and was not disposed to endocrine disease.

Dr. January: Aren't you going to ask Dr. Connor some questions regarding the cholesterol level in this patient's serum?

Dr. Theilen: Was she depositing all of her cholesterol instead of circulating it?

Dr. Connor: Of course no one knows what this patient's situation had been before she became ill. She was seen in this hospital in the throes of an acute illness which in itself may have affected her serum cholesterol. Using postmortem blood, some time ago, we attempted to determine the serum cholesterol in a number of patients dying of coronary disease. To our amazement, these individuals

in general had very low levels of serum cholesterol. This woman had been sick for about eight weeks. She was vomiting, she was eating poorly, and in addition she had a congested bowel. I suspect that whatever her serum cholesterol had been at the time when she was eating well and feeling relatively well, it was not mirrored correctly at the time these two measurements of 140 and 124 mg. per cent were recorded in this hospital. We do know that sick individuals whose diet is very restricted show rather pronounced declines in the serum cholesterol.

The slide that I am showing you reveals what happened in two overweight individuals like the patient under discussion when food intake was greatly reduced. Their serum cholesterol levels were initially about 220 or 240 mg. per cent. Within a week or two, they experienced rather pronounced lowerings of serum cholesterol concentrations. This does seem to be the case in many individuals in whom food intake is interrupted. Fasting, vomiting, gastrointestinal edema and sometimes liver disease will cause a decrease in the serum cholesterol. I think that in the face of extensive coronary heart disease, the fact that serum cholesterol was low at the time this patient was ill means very little. In order to judge abnormalities of lipid metabolism, one must obtain the serum cholesterol at a time when the individual is eating his usual diet. These alterations take place with amazing rapidity.

Why this woman had coronary disease in the premenopausal state is the other question to which we should like an answer. As is well documented, coronary disease is rare in premenopausal women who lack the predisposing conditions that nullify the favorable influence of the female sex. These conditions include hypertension, familial hypercholesterolemia, myxedema, diabetes and other metabolic diseases causing hypercholesterolemia. This patient had borne four children. She did have gallstones. She was overweight. Pregnancy does lead to hypercholesterolemia of a rather marked degree in most women. Perhaps these three factors accelerated the progress of the patient's coronary heart disease.

Are there questions for Dr. Tammes or other questions about this patient?

Dr. Zoe E. Anderson, Nutrition: I should like to call attention to a publication by J. C. Paterson *et al.*, of the Clinical Investigation Unit of Westminster Hospital, Department of Veterans Affairs, and the Collip Medical Research Laboratory, University of Western Ontario, London, Canada. Their interim reports of serial measurements of serum cholesterol levels of patients were determined over a period of time and included evaluations of atherosclerosis and coronary heart disease at autopsy. They found no relationship between serum cholesterol levels and atherosclerosis or myocardial infarcts in these people at autopsy.

Dr. Connor: Are there other comments on this point or others?

Dr. Daniel B. Stone, Internal Medicine: Do we know whether this patient had hypercholesterolemia?

Dr. Connor: No, we do not know that.

I should like to ask about the common conditions likely to produce sudden death such as this woman had.

Dr. Bean: I don't think anyone knows the answer to that question. There are two clinical forms of such deaths that are worth identifying separately. One is the so-called instant physiologic death, the syncopal death that Soma Weiss did a great deal to elucidate. All the signs of life vanish instantly. It is as though someone pulled the master switch and all the lights went out at once. Breathing stops, heart beat stops and blood pressure is gone. There is only the residual warmth to show that the patient has been alive. It is just like a flash of lightning. If you see somebody topple over at a football game, and if you happen to have your stethoscope, you listen and hear nothing. The victim is no longer breathing.

Another form of sudden death is that in which either actual asystole or its physiologic counterpart, ventricular fibrillation, occurs. In such instances there may be moments, perhaps five minutes, in which residual signs—extreme respiratory distress with deep gasping respirations and focal neurological signs—may have time to develop. Victims complain of a narrowing of vision and of things darkening. They black out. They may have monoplegia or hemiparesis at least for a few moments. They may have a profound, drenching sweat. They may live long enough to become cyanotic. What presumably happens is that the myocardium itself gives out and quits propelling blood, but the medulla which governs the cardiorespiratory machinery doesn't give up the respiratory effort. There is usually a very intense generalized vasoconstriction, so that instead of seeing cyanosis, you may see a very intense pallor such as may occur in people who have been injured or have shot themselves through the heart. The extreme pallor indicates vasoconstriction.

Sudden death from stroke is rare. Even with a massive hemorrhage, it usually takes minutes and commonly hours. With a thrombus or an embolus, it usually takes a number of days for death to occur. Pulmonary embolus, much more commonly than not, fails to produce the very speedy death that was described in this woman.

Without a detailed description of whether this patient fell off the bed pan dead, or struggled for a little while and was dead within a few minutes, it seems to me we must assume that she had an arrhythmia. This is a common form of death in people with coronary artery disease, whether they have angina, congestive failure, or the classical features of myocardial infarction. The point that

one should be aware of is that this sort of thing can happen. You don't want to go around tapping your patients on the shoulder and saying, "Buddy, you may die suddenly," for that is not the kind of encouragement they need at such a time. It is well, however, for *you* to be aware of the risk, and certainly it is well for someone in the patient's family to be apprised of this likelihood. Most physicians who see a great many patients in general medicine ultimately have the embarrassment of pronouncing somebody to be fit and in the pink of health, and then have him die as he leaves the office or while he is getting into his car. This is unpredictable, but we should be aware that it can happen.

Audience: Was there more patchy scarring of the heart in areas of hypertrophy?

Dr. Tammes: The fibrosis was scattered throughout the heart. There was no particular site, and since the evidence of hypertrophy was also scattered throughout almost all areas, one cannot really make a pronouncement on that point.

NECROPSY FINDINGS

Anatomical diagnoses:

- Rheumatic carditis with mitral and aortic stenosis and insufficiency
- Coronary arteriosclerosis, severe, with widespread myocardial ischemia and fibrosis
- Congestive heart failure with generalized visceral congestion

Student's diagnoses:

- Cholecystitis and cholelithiasis
- Rheumatic heart disease with congestive failure
- Terminal myocardial infarction
- Possible subacute bacterial endocarditis

Dr. Theilen's diagnoses:

- Rheumatic heart disease with mitral stenosis and insufficiency
- Possible congestive heart failure
- Possible pulmonary embolus
- Chronic cholecystitis and cholelithiasis

DATA ON PROGRAMS IN NURSING EDUCATION

Type of Program	Length of Program	Minimal Educational Requirements	Educational Setting	Administrative Control of School	Range or Average Tuition	Financial Responsibility	Certificate or Degree Conferred	Position for Which Eligible
Practical nurse	Approx 1 calendar yr	2 or more yr of high school, dependent on school requirements	Vocational high school, hospital, or junior college	Local school board or board of trustees of hospital	Free; up to \$800	Usually school subsidized; student purchases uniforms, books, etc.	Diploma or certificate	Bedside nursing under supervision of physician or professional nurse
Diploma (hospital)	27-36 mo	High school diploma	Hospital	Board of trustees of hospital	\$106 to \$2,207 for 3 yr (median school \$826)	Student tuition, hospital and private funds	Diploma—eligible to take examination for licensure as RN	Bedside nursing
Associate degree	2 academic to 2 calendar yr	High school diploma	Community, or junior college	Local school board, or board of trustees of college	Minimal in state or community jr. col. up to \$2,000 per yr in private colleges	Student tuition, state or community sponsorship, and private funds	*Associate degree—eligible to take examination for licensure as RN	Bedside nursing
Basic or generic baccalaureate	4 academic or 4 calendar yr. A few schools offer 5-yr courses	High school diploma	College or university	College or university	Varies in state university; up to \$2,000 or more per yr in private universities	Student tuition and college or university funds	Baccalaureate degree—eligible to take examination for licensure as RN	Bedside nursing, public health nursing (candidate for head nursing)
Baccalaureate for RN	2½-3 academic yr or more	High school diploma	College or university	College or university	Varies in state university; up to \$2,000 or more per yr in private universities	Student tuition and college or university funds	Baccalaureate degree (BS, BN, etc.)	Bedside nursing (candidate for head nursing)
Master's	1-2 yr	Baccalaureate degree	College or university	College or university	From \$2,200 to \$3,500 per yr	Student tuition (traineeships available from USPHS)	Master's degree (MS, MA, MEd, MPH)	Administrator, educator, clinical specialist
Doctoral	Varies with choice of major area; approx 3 yr or more	Baccalaureate and master's degrees	College or university	College or university	From \$2,200 to \$3,500 per yr	Student tuition (research fellowships available from USPHS)	Doctoral degree in nursing or related field	Administrator, investigator, and others

* Some states do not permit graduates of these schools to qualify for RN licensure and practice.



DR. JEANNETTE THROCKMORTON

Upon the death of Jeannette Dean Throckmorton, M.D., on July 22, at the age of 80 years, the Iowa Medical Society, the medical profession and many individual physicians lost a staunch friend.

Dr. Throckmorton was librarian of the State Medical Library from 1929 until her death. Prior to that long period of service, she had practiced in Chariton from 1907 to 1919, and had taken postgraduate work at Columbia University and the University of Chicago. As state medical librarian, she was helpful to many a physician, over the state, in the pursuit of information that would be helpful to him in the management of a difficult case, or in the writing of a paper. Her zeal and her enthusiasm in uncovering especially pertinent data was always a delight. There probably was no physician in the state more interested in the medical history of Iowa, or better informed on that subject.

Dr. Throckmorton was a Life Member of the Iowa Medical Society, and in 1955 she received its Award of Merit. No physician was ever more proud of the M.D. degree, and few have excelled her in maintaining the high standards of the profession of medicine.

PROTECTING MISUSED CHILDREN FROM FURTHER INJURY

As one reads reports of the neglect and physical abuse of babies and children in various parts of the nation, his immediate reaction is "It can't happen here." Yet a recent survey by the State Departments of Health and Social Welfare, here in Iowa, has shown that such cases are quite numerous and serious right here at home. Its revelations are shocking and are incongruous in a community of essentially stable and conservative people.

According to the report which begins on page 692 in this issue of the JOURNAL, between October 1, 1962, and March 31, 1963, a total of 43 cases of physical abuse involving 71 children were investigated and verified by one or the other of the two agencies. The 43 cases were scattered among 28 of the 99 Iowa counties. They included only those cases known to county child welfare services and to public health nurses, and did not include cases that were referred directly to the police or the courts.

Physicians are urged to read the report care-

fully. It will alert every doctor to the possibility of maltreatment as a cause of the injuries he sees in children, and will encourage him to help prevent their recurrence.

Quite possibly there is a need for legislation in this area. When confronted with a patient in whom physical or emotional abuse can be suspected, the doctor should alert a service or agency capable of studying the child's home situation. Unfortunately, however, he must be circumspect if he is to avoid a suit for damages. Thus, as the report points out, safeguards are needed for those who seek to protect these unfortunate patients from further harm.

POSTOPERATIVE BACTERIAL SHOCK

In a recent article, Walters and McGowan* have pointed out that patients are often wrongly diagnosed as having pulmonary embolism or myocardial infarction, when in reality they have developed postoperative bacterial shock. In such cases, failure to recognize that the dramatic circulatory collapse is the result of infection prevents the prompt initiation of proper treatment, and frequently results in the patient's death.

In a study of non-hemorrhagic surgical shock, the two British pathologists observed that considerable numbers of patients who had been thought to have pulmonary embolism or myocardial infarction on the basis of shock, cyanosis and rapid respirations failed to show these conditions at necropsy. Proof that circulatory failure is bacterial in origin may be difficult until bacterial studies have been performed or an exploratory laparotomy has been done. It is emphasized that an infective cause should be considered in all cases of postoperative shock, and especially when pulmonary embolism is suspected. Acute circulatory collapse may be the initial symptom of peritonitis, urinary-tract infection, staphylococcal enteritis, pneumonia or septicemia from any cause.

One case in which the proper diagnosis was made and proper treatment was given supports the authors' thesis. The patient was a 69-year-old man in whom the urethral catheter had been removed seven days after a prostatectomy. Five hours after removal of the catheter, the patient collapsed and vomited, became cyanotic, and experienced a blood-pressure drop from 180/110 to 80/45 mm. Hg. An electrocardiogram showed a right bundle branch block and frequent extra systoles. The initial diagnosis was pulmonary embolism, but within a short time the patient's temperature rose to 103°F., and a bacterial origin of the circulatory collapse was suspected. A blood culture was taken, and chloramphenicol therapy was instituted. The patient made a prompt recovery, and the blood culture yielded a growth of *Proteus* sensitive to chloramphenicol.

* Walters, G., and McGowan, G. K.: Pulmonary embolism or bacterial shock? LANCET, 2:17-19, (July 6) 1963.

Five cases in which the clinical diagnosis was either pulmonary embolism or cardiac infarction came to autopsy. Both of those diagnoses were excluded, and infection was demonstrated as the true cause of death. The infections had occurred following partial gastrectomy, bowel resection, total gastrectomy and acute appendicitis.

The cases presented showed that acute circulatory collapse associated with infection can occur with dramatic suddenness and can present many of the symptoms of massive pulmonary embolism. Confusion over the diagnosis can occur, particularly in early postoperative peritonitis, because during the first few hours after onset, many of the usual signs are absent. The patient's temperature may remain normal or may be elevated in both pulmonary embolism and infection. The presence of a pleural friction rub must be interpreted with caution. According to the authors, it is almost axiomatic that in a shock patient who has had a recent abdominal operation, a pleural friction rub located over the attachment of the diaphragm is symptomatic of peritonitis. Perhaps the best differentiating sign is the estimate of jugular-vein pressure. In the early stages of circulatory failure due to infection, it usually is low, whereas it is elevated in massive pulmonary embolism.

The authors emphasize that in patients who develop postoperative collapse, and in whom pulmonary embolism is thought to be causative, serious consideration must be given to bacterial shock as the true cause. Early recognition of infection permits the prompt institution of antibiotic therapy, which will reduce the mortality of this serious complication.

THE THREAT OF SMALLPOX IS STILL WITH US

How long has it been, doctor, since you and the members of your family were vaccinated for protection against smallpox? How long has it been since the hospital with which you are associated vaccinated all professional and lay personnel? Do you conscientiously vaccinate your patients every five years, as recommended by public health authorities?

The Committee on Infectious Diseases of the American Academy of Pediatrics recommends that smallpox vaccination be performed during the first year of life, again upon the child's entrance into school, and every five years thereafter. The U. S. Public Health Service recommends that all medical and paramedical personnel be revaccinated every three years. In endemic areas, vaccination is thought essential annually.

The press recently reported outbreaks of smallpox in Poland and in Yugoslavia. Last year the disease was imported into England and Wales by Pakistani immigrants, all of whom had International Certificates of Vaccination upon their ar-

rival. As a result of these importations, 67 cases of smallpox resulted. There were 26 deaths—a mortality rate of 39 per cent. Two of the patients who died were physicians.

Smallpox continues to be a serious problem in many countries. The disease is endemic in areas of Asia, Africa and South America. In 1961 there were more than 78,000 cases reported from 59 countries, more than one-half of them from India. The frequency and speed of international travel increase the risk of spreading the disease. Air travelers can reach distant areas during the incubation period of the disease.

Smallpox disappeared from this country in the 1940's. Quarantine authorities at ports of entry constitute our first line of defense against importation of the disease. A valid International Certificate of Vaccination or Revaccination is demanded of everyone who enters this country—U. S. citizens and others alike. The requirement that a successful vaccination or scar be shown is a wise precaution. The Pakistani immigrants who introduced the disease into England and Wales last year had signed certificates of vaccination, but they became critically ill with the disease shortly after their arrival by air in Britain.

In addition to maintaining a vigilant corps of immigration officers at our ports of entry, we need to see to it that there is a high degree of immunity in all American citizens, but especially among people engaged in the transportation industry and among medical and paramedical personnel. Systematic vaccinations of the general population at five-year intervals will assure a secondary line of defense against a serious outbreak of the disease in this country.

It is only through the combined efforts of the USPHS and practicing physicians that success in keeping out smallpox can be continued. Health authorities feel considerable concern about the low level of immunity in the United States. It is just possible that we may be lulled into a false sense of security.

THE KREBIOZEN CONTROVERSY

It is hoped that the long and bitter controversy over the drug Krebiozen may be resolved, now that the federal government is involved in an investigation of its merit.

The American Medical Association has been subjected to serious criticism and has been accused of taking an arbitrary position concerning the use of this drug. It is inconceivable that organized medicine would refuse to recognize a remedy of proved value in the treatment of cancer. It is also difficult to believe that an able scientist would refuse to cooperate in an independent evaluation of such a controversial preparation.

The acrimonious dispute, and the charges and countercharges have benefited no one. The question should have been resolved long ago!

Editorials continued...

IS NITROGLYCERIN ONLY A PREVENTIVE FOR ANGINA PECTORIS?

A recent study by Sandler and his associates* on the use of glyceryl trinitrate (nitroglycerin) in angina pectoris will unquestionably create some controversy. This British group, from the cardiac department of the Leicester Chest Hospital and the Leicester Royal Infirmary, have conducted a double-blind objective evaluation of glyceryl trinitrate in the treatment and in the prophylaxis of acute attacks of angina pectoris so as to eliminate, as far as possible, physicians' reliance on a patient's subjective evaluation of the efficacy of the drug in relieving his attacks of angina.

Fifteen patients with well authenticated and typical attacks of angina pectoris were selected for study. In all of them the angina had been stable for at least six months, and the durations of symptoms varied from six to 84 months. The presumptive cause of angina, in each instance, was coronary-artery disease, and three of the group had electrocardiographic evidence of previous myocardial infarction. Most of the patients in the study group were normotensive, and only two of them had diastolic pressures over 100 mm. Hg. All were taking glyceryl trinitrate tablets freely for anginal attacks, but no other vasodilating drugs were permitted them for a month preceding the study and throughout the study period.

Each patient was hospitalized for study. Attacks of angina were induced by an exercise-tolerance test—a modification of the Master two-step method. The patient exercised at his own speed until angina stopped him. The total number of circuits (two steps up to a platform and two steps down) and the time required were recorded. An electrocardiogram was obtained before the patient started the exercise, immediately after the exercise, and at 30-second intervals thereafter, by means of chest lead V5, until all evidence of myocardial ischemia had disappeared. An ST depression below the isoelectric line of at least 0.08 sec. was regarded as indicative of myocardial ischemia. The degree of depression and the duration were recorded. The systolic and diastolic blood pressures were determined before the test, at the onset of angina, when the angina was relieved, and at the time when the electrocardiogram showed the disappearance of any evidence of ischemia.

The medications employed for both prophylactic and therapeutic trials were glyceryl trinitrate tablets containing 0.25, 0.5 and 1.0 mg. and a placebo. The tablets were identical in appearance

and were given sublingually. A controlled double-blind technic was used so that neither the patient nor the physician knew what the patient was receiving. The prophylactic action of the tablets was evaluated by giving them three minutes before the start of the exercise-tolerance test, and the onset and duration of each patient's angina were accurately timed. The therapeutic effect was studied by giving the tablet immediately after the onset of angina, and the duration of the pain was accurately timed with a stop-watch.

The results gave objective evidence that glyceryl trinitrate is effective in the prophylaxis of angina pectoris. The drug, in doses of 0.25 and 0.5 mg., shortened the duration of exercise-induced angina, and the doses significantly increased the amount of exercise that patients could perform before angina developed. The 1.0 mg. dose failed to reduce the duration of angina, probably because it lowered the systemic blood pressure.

The study failed, however, to show any objective evidence that glyceryl trinitrate relieves an attack of angina that has already commenced. Sublingual doses of the drug up to 1.0 mg. failed to influence the duration of the attacks—a measurement necessarily based on a subjective factor—or to produce objective changes in myocardial ischemia, as shown on the electrocardiogram.

The vasodilating effect of glyceryl trinitrate on normal coronary arteries has been established. In patients with diseased coronary arteries, there is considerable controversy as to whether the drug has the same effect. According to Sandler *et al.*, there is doubt as to whether any significant additional dilatation can occur after an attack of angina has developed. The reduced oxygen in the arterial blood in the coronary arteries, relative to myocardial requirements, is the most powerful vasodilator of the coronary arteries. In other words, the myocardial anoxia which induces an attack of angina causes a maximum dilatation of the coronary arteries, so that glyceryl trinitrate is unlikely to have any additional dilator effect. The vasodilation has already occurred before the drug is taken. In fact, in some cases, there were unfavorable results following the ingestion of the drug, in that the angina was aggravated.

The authors concluded their report with the concise statement: "There was no evidence to support the therapeutic use of glyceryl trinitrate for relieving attacks of angina pectoris; the drug was effective only when administered before exertion."

Despite the conclusions that are to be drawn from this study by Sandler and associates, more objective evidence must be presented before the patient with angina pectoris will abandon the use of glyceryl trinitrate for relief from his attacks, and likewise the clinician will continue to prescribe the drug until more convincing evidence of its ineffectiveness has been demonstrated.

* Sandler, G., Ilahi, M. A., and Lawson, C. W.: Glyceryl trinitrate in angina pectoris. *LANCET*, 1:1130-1136, (May 25) 1963.

THE DOCTOR'S ROLE IN MAKING HIGHWAYS SAFE

According to the Travelers Insurance Company, 40,500 persons were killed in traffic accidents in the United States during the year 1962. An additional 3,345,000 people were injured but escaped death in traffic accidents during the year.

Studies revealed that mechanical failure was an uncommon cause of highway accidents, and that about 88 out of every 100 accidents were due to human error and lack of judgment. The company also pointed out that 80 per cent of the accidents occurred on dry roads and in clear weather.

In Iowa during 1962, there were 618 deaths due to highway accidents. Excessive speed was the cause of a high proportion of the mishaps; liquor was involved in 22.5 per cent of the fatal ones. Although drivers under 24 years of age constitute but 19.7 per cent of all licensed drivers, the drivers in this age group were involved in 33.7 per cent of the fatal accidents.

Despite all of the publicity and warnings, the highway carnage continues. As of August 20, Iowa highway deaths had reached 386 for the year 1963—34 more than on the same date in 1962.

Accidents are not confined to the arterial highways, but occur on country roads, and in cities and towns, suggesting that carelessness and disregard of the rules of safe driving are common factors, in addition to excessive speed. What influence the new Iowa liquor law may have on traffic accidents remains to be seen.

The driving public seems to have remained largely unimpressed by the tragic highway accident toll. Cold statistics must be translated into more concrete and more imposing terms if they are to overcome public apathy and indifference. Perhaps it would be well to point out that the effects of highway accidents in the United States last year were equivalent to the killing of every man, woman and child in both Iowa City and Iowa Falls, and the injuring of every resident of the City of Chicago. People are inclined to accept the day-to-day toll, scattered throughout the country, as the price we must pay for modern transportation. Until they are sufficiently aroused to demand greater safety on the highway, the slaughter and maiming will continue.

Since it is physicians who must treat these injured people, it is appropriate for them, individually and as a profession, to assume a more active role in safety education, in demanding rigid enforcement of existing laws, and in conducting aggressive, scientific studies of safety measures. As an initial step, they should do their best to make drivers' licenses more difficult to secure and to retain. Drivers who jeopardize others by disregarding the rules of safe driving, or by letting their physical or mental handicaps endanger the lives of others should be deprived of the privilege of the highway.

Too Many Homes for the Aged

At a conference on the problems of aging in Iowa, conducted in Ames on September 13 by the Iowa Welfare Association, Mr. Ralph Quackenbush, executive secretary of the Iowa Nursing Home Association, and Mr. Walter Lane, of the Division of Hospital Services of the State Department of Health, reported that retirement homes and nursing homes are rapidly becoming too numerous in Iowa.

They said that 8 beds per 1,000 of total population, or a number of beds equal to 5 per cent of the number of persons 65 years of age or over are accepted measures of adequacy. A few years ago Iowa had an absolute deficiency in such accommodations, and a scarcity of truly first-class ones. Yet by the end of 1964 there will be 23,516 such beds in the state, most of them highly acceptable, or 8.5 beds per 1,000 of total population.

At present, plans for 57 new homes are approved for construction, most of them large ones, despite the fact that requirements are expected to increase by no more than 820 beds per year. Currently, though occupancy averages 95 per cent, and though some of the homes that fit their charges to the individual's ability to pay have waiting lists, the occupancy rate in some counties is no more than 60 per cent.

Correction

We have been asked to correct an error that occurred in transcribing the S.U.I. Clinical Pathologic Conference report which appeared in the August, 1963, issue of the JOURNAL.

On page 558, Dr. D. S. Longnecker, the pathologist, is quoted as having said: "Because the slides under consideration display an unusual proliferation of trophoblastic elements with villus formation, I should tend to make a diagnosis of choriocarcinoma." Dr. Longnecker said "... trophoblastic elements *without* villus formation. . . ."

W. B. SAUNDERS COMPANY features the following new books and new editions in their full page advertisement appearing on page vii in this issue:

CURRENT PEDIATRIC THERAPY—Edited by Gellis and Kagan

This new book gives you the best treatments, currently in use by leading authorities, for over 300 diseases and disorders that afflict children.

MAINLAND—ELEMENTARY MEDICAL STATISTICS

A New (2nd) Edition—revised to bolster your statistical thinking and also your use of the standard statistical formulas and procedures.

President's Page



Most of you, I feel sure, are as pleased as I am that the Board of Social Welfare has approved the use of county ranges of fees as the basis for payment for services rendered to recipients of Medical Assistance for the Aged. The details of the arrangement are summarized in this issue of the JOURNAL on the pages entitled "In the Public Interest."

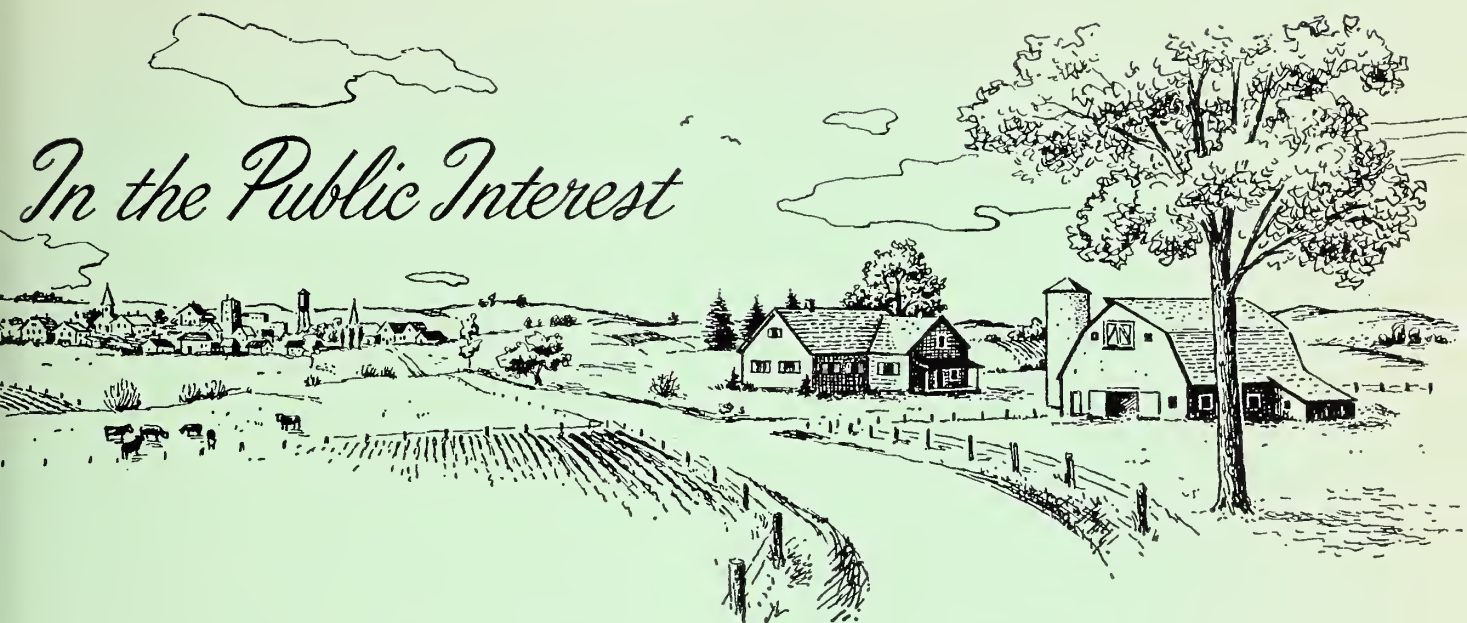
Please note that the IMS is committed to protect the fiscal soundness of the plan. The Judicial Council has assured me that any member who deliberately takes advantage of the "usual, customary and reasonable fee" provision of MAA will be dealt with promptly and firmly.

Attendance totaled 190 at the Fall Conference of County Medical Society Officers and Other Representatives, on September 18 in Des Moines, making it the largest such meeting on record. A summary of the excellent program that was presented there will appear in next month's JOURNAL, and a few of the papers will be published in full, in subsequent issues.

Once again, let me remind you to attend and be prepared to express your opinions at your Area Meeting on IMS projects and Blue Shield policies. The full schedule of these meetings can be found on the cover of the September JOURNAL. If the date of the meeting in your area is inconvenient for you, and if you can attend one of the others, please feel free to do so.

C. W. Edwards, Sr.

President



In the Public Interest

The State Board of Social Welfare and the IMS Will Work Together on the Payment of "Usual and Reasonable" Physicians' Fees in MAA Cases

Early in September, the State Board of Social Welfare accepted a proposal from the Iowa Medical Society for the payment of "usual, customary and reasonable" fees to physicians for services rendered to persons eligible for Medical Assistance to the Aged. In compliance with a request from the Board, and to facilitate the Board's consideration of its proposal, the IMS had submitted ranges of fees for medical and surgical procedures which were being charged in the various counties at the time when information was gathered for the IOWA RELATIVE VALUE INDEX (green book). The IMS officers made it clear to the Board that the information was gathered in 1960 and should be updated. It therefore reserved the right to negotiate changes in those ranges, from time to time, as circumstances necessitate.

AN OUTLINE OF THE PLAN

Following is a brief summary of the plan that is to be followed, provided that the U. S. Department of Health, Education and Welfare approves:

1. The physician will send the fiscal agent his claim for services rendered to an individual eligible for MAA. (Several insurance firms have submitted bids, and it is expected that one of them will be appointed fiscal agent very shortly.)

2. The fiscal agent will make payment directly to the physician in accordance with the county fee guidelines provided by the IMS.

3. A physician's charge may not exceed his own usual fee for the service he has performed, nor will payment be immediately approved if the amount is in excess of the maximum in the range of fees for that procedure in his county.

4. The fiscal agent's medical consultant will determine the amount to be paid for a procedure not listed in the schedule, and if his decision is unacceptable to the physician, or if there is a disagreement about compensation in a case that has taken an unusual amount of time or has presented extraordinary difficulties, the medical consultant to the Department of Social Welfare and the IMS Advisory Committee will attempt to settle the question.

5. After meetings between IMS representatives and the Board of Social Welfare, a set of rules and regulations were agreed upon, for the guidance of the fiscal agent. They were substantially as follows:

a. The fiscal agent may compensate two physicians for care provided a patient simultaneously for two unrelated conditions. A written report may be required.

b. A physician may charge extra for drugs and other materials that he has furnished.

c. Unusual but necessary in-hospital care will be paid for, irrespective of subsequent surgery.

d. In certain instances, most of them minor surgical procedures, the range of fees is understood

to cover no more than the surgery. Pre- and post-operative care is to be extra.

e. When multiple procedures have been done through a single incision, only the major one of them will be paid for. A written report may be required.

f. When more than one incision has been made at a single operative session, the value of the major procedure and half the value of each lesser one will be paid for.

g. When bilateral procedures have been performed at the same time, the full value of the first and half-value for the second will be paid for.

h. No fees will be paid to physicians in training or to hospital employees.

i. Except in unusual instances, payment will be made for no more than one visit per day to a hospitalized patient.

j. The fees paid to the surgeon in charge and to the assistant at surgery may not exceed the customary fee for the surgical procedure as stated in the schedule.

k. In a case of mental illness, payment will be made only for diagnosis—i.e., for a single outpatient visit. No payment will be made for inpatient psychiatric care, since it is excluded by the terms of the MAA Enabling Act and other Iowa statutes.

6. The fiscal agent will employ methods designed to reveal over-utilization and/or excessive billing, and will refer such cases to the Board of Social Welfare and the IMS.

7. The IMS Advisory Committee will endeavor to protect the fiscal soundness of the program and to serve the interests of the taxpayers and of the MAA recipients. To achieve those objectives, it will ask the assistance of county medical society review committees and other medical society committees and councils at the local and state levels whenever necessary.

A SIGNIFICANT EXCHANGE OF LETTERS

The cordiality that has prevailed between the IMS representatives and the Board of Social Welfare and its staff throughout the negotiations on this matter was evidenced by an exchange of letters between Dr. C. V. Edwards, Sr., the IMS president, and Mr. Lawrence Putney, the BSW chairman.

Dr. Edwards wrote: "I am sure all of the [IMS] officers will share my pleasure when they are informed that the State Board of Social Welfare has approved utilization of county ranges of fees as the basis of payment for services rendered recipients of Medical Assistance for the Aged.

"In our judgment, the usual, customary and reasonable fee concept is equitable and fair, and will provide maximum opportunity for this plan to serve the best interests of the recipients and taxpayers. I am confident physicians will provide full cooperation in making this experimental program a success.

"The Iowa Medical Society is committed to utilize its facilities to cooperate with the Board of Social Welfare to protect the plan's fiscal soundness. In the instance where it is established that a member of the Society has deliberately taken advantage of the usual, customary and reasonable fee provision of MAA, he will be dealt with promptly and firmly.

"We sincerely appreciate the Board's willingness to cooperate with the medical profession in implementing this plan on a basis which we believe is philosophically essential. Some time in the future it is hoped that we can meet with you and those of your designation in order to maintain our present liaison and establish mutual understanding on the various provisions of the new program.

"I have personally enjoyed working with you and the members of the Board and staff in this program. Dr. [Elmer M.] Smith, Miss [Mary] Staggs and Mr. [Charles] Ballinger have been especially helpful, and I hope you will convey my expression of thanks to them."

In reply, Mr. Putney wrote Dr. Edwards on September 18: "Thank you for your nice letter of September 13, regarding the adoption by the State Board of the county range of fees as a basis of payment of medical fees.

"We have had a rather strenuous past three months in working out a plan for the operation of the Medical Care for the Aged Program. The context of this plan employing a fiscal agent and with the broad scope of service is unlike any in existence; consequently our staff had to do much pioneering, since we did not have the experience of any other states.

"We are quite confident that the medical profession is going to exert every effort to have a good program, to render the best service possible to those eligible at fair and justifiable billings.

"We are very pleased that Doctor Smith is on our staff. We feel the respect he commands will be beneficial to our State Department and the medical fraternity. It has been a pleasure to become acquainted and work with you gentlemen. I am sure that there will be problems in the future that must be resolved, and that your advice and consultation will be eagerly sought by our Department."

Highlights of IMS Officers' Meetings

Information contained herein is based on reports and actions of the IMS Board of Trustees and Executive Council during their August sessions.

IMS BUILDING PROJECT

The Board authorized members of its Building Committee to visit the headquarters office of the Indiana State Medical Association to obtain information which would be helpful to the Society in the development of possible building plans, as approved by the House of Delegates in April, 1963. A preliminary report on the building project has been presented at the IMS Fall Conference for County Medical Society Officers and Other Representatives, on September 18, in Des Moines, and is likewise being presented at each of the area meetings which are being held throughout the state.

DR. WALTER L. BIERRING MEMORIAL

At the time of the meetings of the Board of Trustees and the Executive Council, Iowa physicians had contributed \$2,555 to the Dr. Walter L. Bierring Memorial, and an additional \$545 had been received from other interested individuals and associations. The executive director of the IMS, who is serving as treasurer of the Memorial Committee, announced that plans have been completed to get in touch with physicians in various specialty and scientific organizations in which Dr. Bierring was interested and active.

IOWA ASSOCIATION OF MEDICAL ASSISTANTS

It was announced that representatives of the Iowa Association of Medical Assistants had met with Dr. O. N. Glesne, chairman of the IMS Doctors' Assistants Advisory Committee, and the executive director of IMS to discuss plans for the annual meeting of their group, scheduled for May, 1964. The IMS will cooperate in promoting and arranging a section of the IAMA annual meeting.

RELATIONS WITH VOLUNTARY HEALTH AGENCIES

The IMS had recently received a communication from the Iowa State Association of County Officers announcing that it has assumed responsibility for sponsoring a voluntary state and local council of private and public agencies, to be called "The Joint Coordinating and Planning Council for Health, Education and Welfare." The purpose of this joint council will be to provide a vehicle for the voluntary coordination of the planning and

activities of agencies working in those three fields. In this connection, it was pointed out that consideration should be given to the maintenance of more direct and continuing liaison between the IMS and all voluntary health agencies, and it was agreed that the IMS Plan and Scope Committee, in its continuing study of IMS committee structure, should be requested to make recommendations concerning the establishment of an IMS Committee on Relations With Voluntary Health Agencies.

IOWA MEDICAL FOUNDATION

It was announced that an informational booklet outlining the functions and objectives of the Iowa Medical Foundation will be prepared for distribution to IMS members and other interested individuals, and the "In the Public Interest" (green sheet) in the September JOURNAL has since been devoted to a discussion of the Foundation. It was suggested that a special form be developed for use by physicians for including a designation of funds to the Iowa Medical Foundation in their wills, and included as a part of the informational booklet.

IMPLEMENTATION OF MAA

An IMS representative on the Kerr-Mills Advisory Council reported on a meeting of that group which had been held on July 22, at which time information regarding specifications for the fiscal agent were reviewed. It was announced that, up to that time, the following companies had indicated an interest in serving as fiscal agent for the MAA program in Iowa: Blue Cross-Blue Shield, Mutual of Omaha, Continental Casualty Company, and Bankers Life Company.

It was explained that liaison with the State Board of Social Welfare had been maintained by appropriate IMS officers, committee members and staff. The proceedings of joint conferences and contacts that had occurred on July 29, August 22 and August 26 were reviewed, at which the Society's support of the "usual, customary and reasonable fee" concept had been explained and reaffirmed. In addition, two news stories and an editorial which had appeared in the DES MOINES REGISTER AND TRIBUNE relating to implementation of the MAA program in Iowa were reviewed for informational purposes. The news stories concerned an action of the Board of Social Welfare to use the same physicians' fee schedule under the MAA program as is utilized under the OAA program, and

its subsequent decision to reconsider that proposal.

It was explained that ranges of fees for each county medical society had been completed, and as previously agreed upon by the Board of Social Welfare and IMS officials, would be delivered to the Board of Social Welfare no later than August 29. In this connection, it had been stressed to the Board of Social Welfare that the determination of county ranges of fees was being based on a 1960 survey, and that an opportunity should be provided for the IMS to update the ranges at appropriate intervals.

The Executive Council commended Society officers, committee representatives and the staff for their efforts in maintaining proper liaison with the Board of Social Welfare, and in urging the "usual, customary and reasonable fee" concept for use under the MAA program.

MEDICAL CONSULTANT TO THE BOARD OF SOCIAL WELFARE

E. M. Smith, M.D., the Society's alternate delegate to the AMA, who has been appointed full-time medical consultant to the Board of Social Welfare, effective October 1, 1963, commented briefly on his new position.

PLAN AND SCOPE COMMITTEE

The Executive Council was informed that during a joint meeting between the Board of Trustees and the Plan and Scope Committee on Tuesday evening, August 27, the Plan and Scope Committee had developed conclusions regarding the "usual, customary and reasonable fee" concept, subject to further review and comment from committee members, and the Board of Trustees. When these conclusions have been put into final form by the Plan and Scope Committee, and after the Board of Trustees has considered them, they will be submitted to the Executive Council.

AREA MEETINGS OF PHYSICIANS

The attention of members of the Executive Council was called to the need for urging doctors throughout the state to attend the area meetings which are to be held in various places throughout the state during the next few weeks. At each of them, Blue Shield policies and current IMS projects are to be reviewed, and all physicians are encouraged to express their opinions regarding them.

A list of those meetings has since appeared on the front cover of the September JOURNAL, and additional information about them has been printed on and after the President's Page in that same issue.

DOCTOR! LOOK AT YOUR COPY OF THE SEPTEMBER JOURNAL TO FIND THE PLACE AND DATE OF THE MEETING FOR PHYSICIANS IN YOUR AREA. BE SURE TO ATTEND IT.

DuPont's Experience With Alcoholics

For 19 years the DuPont Company has been conducting a rehabilitation program for alcoholics. At a time when alcoholism still was widely regarded with revulsion, and its causes were misunderstood, the DuPont undertaking was a bold venture—and there weren't many guideposts. DuPont did not want to give the impression that it had more problem drinkers than anybody else, or that it intended to barge in on an employee's social life. Rather, as Dr. Allan J. Fleming, the medical director, says: "We wish to emphasize that we consider alcoholism a disease and feel that the rehabilitation of problem drinkers is as much a part of the medical program as the treatment of any other disease.

It is estimated that over the years at least 1,100 DuPont employees have been handled as problem drinkers. A fairly close check reveals rehabilitation of between 65 and 70 per cent. The Medical Division reports that from 85 to 90 per cent of those who recovered—*cure* is a word never used in this connection—eventually were promoted to better jobs than they had previously held. Most of those involved are men, but quite a few women have been helped—wives of employees as well as women employees.

David, an ex-alcoholic and director of DuPont's rehabilitation activities, assists in the rehabilitation of any problem drinker working for DuPont by helping establish alcoholics anonymous branches in places where DuPont has interests and where no branch exists, by visiting AA branches in parts of the country where the company has plants or units, by acquainting them with DuPont's plan of procedure, by giving talks on treatment of the alcoholic, and by detecting the problem drinkers as early as possible, especially those classified as hidden drinkers.

When it has been determined that an employee is a problem drinker, he is turned over to the Medical Division for three months. At the end of the period, the Medical Division will recommend one of two procedures: (1) that the problem drinker has recognized his problem, that he is taking it seriously and that the company believes, in all probability, he will be a good employee so far as alcoholism is concerned, or (2) that he doesn't recognize his problem, shows little or no interest in reshaping his life and should be discharged.

From its experience with problem drinkers, DuPont recognizes that people become alcoholics from motivations as various as human temperaments. As David has stated, one should realize that the alcoholic is anything but a degenerate. He is over-ambitious, a perfectionist, an idealist, a searcher for a better world. He is usually a very good craftsman, a good mechanic, a good professional man. Intellectually he is grown up, but not so emotionally.

THE JOURNAL *Book Shelf*



BOOK REVIEWS

HERNIA, by *Amos R. Koontz, M.D.* (New York, Appleton-Century-Crofts, Inc., 1963. \$11.95).

In the preface, Dr. Koontz anticipates the reader's inquiry: "Why another book on hernia?" He answers the question by explaining his lifelong interest in hernias and his belief that the subject is not adequately emphasized by surgical educators. He also indicates that his book is based on personal experiences and makes no attempt to cover the subject in great detail.

The book is what the author says it is—primarily a personal review of the subject. This turns what could be fairly dull reading into an interesting narrative of the author's ideas and viewpoints. As for actual scientific presentation by fact and figure, it is not much different from any other monogram on hernia, but the author's style of writing is distinctive.

The book is a good, relatively short, review of the subject, made doubly attractive by the author's personal manner of expression. Incidentally, Dr. Koontz views cigarette smoking and obesity with an intolerance and lack of sympathy that is usually seen only in reformed smokers and in skinny metabolic freaks. —*Daniel F. Crowley, M.D.*

DISEASES OF THE CHEST, SECOND EDITION, by *H. Corwin Hinshaw, M.D.*, and *L. Henry Garland, M.D.* (Philadelphia, W. B. Saunders Company, 1963. \$20.00).

With the present increase in emphasis upon respiratory diseases, this new edition of the volume **DISEASES OF THE CHEST** is timely. The book has a good format, the typography is clear, and the x-ray reproductions are of high quality. The authors have arranged the material logically, and have included an excellent chapter on the radiologic examination of the thorax; a forthright discussion of injuries of the thorax; and a careful appraisal of the solitary pulmonary nodule. The present edition has especially good coverage of bronchial carcinoma and other intrathoracic tumors. A rather unusual section on pulmonary diseases of occupational origin closes the volume.

Helpful charts and lists occur throughout the book. Among these are a differential diagnosis of pulmonary tuberculosis (p. 504); a chart of mycobacteria resembling tubercle bacilli (p. 587); a list of "some causes of pleural effusion" (p. 594); and a provocative chart showing the death rate from pulmonary tuberculosis over the past sixty years.

One finds some room for disagreement on the concepts of bronchiectasis and its management. The lack of a discussion of pulmonary metastases from pancreatic carcinoma is unexpected.

Much of the contents of the book, except for the x-ray reproductions, can be found in any current edition of a general medical text. The unique quality of

this work is that it reflects the personal clinical and roentgenologic approaches of the two authors, and has, therefore, an individual flavor, best demonstrated in the discussions of x-ray diagnosis.

Undoubtedly hospital libraries will include this volume among their reference materials on diseases of the chest.—*Leon J. Galinsky, M.D.*

SURGERY IN WORLD WAR II: THORACIC SURGERY, VOL. I, edited by *Col. John Boyd Coates, Jr., MC*; *Frank B. Berry, M.D.*, and *Elizabeth M. McFetridge, M.A.* (Washington, D. C., Office of the Surgeon General, Department of the Army, 1963, \$4.25).

This first book of a two volume series contains a history of the significance of thoracic injuries in wars past, as well as the establishment of policies for care of the thoracic injury. It was during World War II that this field of surgery "grew up" with a rapidity theretofore unequalled. The development of "centers" brought about an association of men and their ideas, both British and American. Strides in pulmonary physiology, blood banks, trained surgeons and anesthesiologists, rehabilitation measures and the availability of penicillin—these are some of the more important factors responsible for this growth.

This was a most interesting book to read. It is nicely compiled and written in a retrospective narrative fashion. It is divided into an introductory part, a second part having to do with administrative considerations in establishing thoracic surgery centers and policies, and a third and final part called, "The General Management of Wounds of the Chest." This latter portion is clinical in nature. It is written with descriptive detail as to the methods used and the reasons for using them. Eight authors are responsible for this creation, and they are to be complimented on an excellent volume. —*Alfred N. Smith, M.D.*

EXTERNAL INFECTIONS OF THE EYE, by *Helena Biantovskaya Fedukowicz* (New York, Appleton-Century-Crofts, Division of Meredith Publishing Company, 1963).

Through the medium of excellent descriptive techniques, coupled with the very beautiful colored illustrations by Beatrice Grover, the author has presented to the medical profession a notable work which should prove of value to all physicians who have occasion to examine and treat external infections of the eye. The text is divided into several sections according to the etiologic agents responsible, with a final chapter on the techniques of laboratory procedures that are necessary in order to establish a definitive diagnosis. The author does not attempt to discuss diagnostic methods other than the simple ones, so that the busy practitioner will not be encumbered by practices outside his capabilities. The individual chapters take into consideration the basic general principles as well as specific

clinical and laboratory findings of the different conditions described. General as well as specific therapeutic measures are discussed. At the end of each chapter, adequate reference material is given to the reader who is desirous of seeking further information.—*M. E. Alberts, M.D.*

CLINICAL EXAMINATIONS IN NEUROLOGY, SECOND EDITION, by *Members of the Sections of Neurology and Section of Physiology, Mayo Clinic and Mayo Foundation* (Philadelphia, W. B. Saunders Company, 1963, \$8.50).

The purpose of this book is to present a logical and consistent method of performing an adequate neurologic examination and arriving at the diagnosis on a clinical basis. Various portions of the examination are described, along with some description of their physiologic and anatomic background. Various charts, methods of scoring and ways of recording the results of the examination are provided for each portion. In addition, there is a chapter on electroencephalography, electromyography and various chemical aids to neurologic examination.

The technic indicated in this volume could well be used in any examination of a patient where completeness, logic and method are important. This would apply whether or not the physician is a general practitioner or a specialist in neurology or psychiatry. It reemphasizes once more the importance of the physician's abilities and knowledge—rather than his dependence upon the laboratory.—*Howard V. Turner, M.D.*

CLINICAL METABOLISM OF BODY WATER AND ELECTROLYTES, by *John H. Bland* (Philadelphia, W. B. Saunders Company, 1963).

The title of the book leads the reader to expect a complete discussion of the metabolism of body water and the various electrolytes. An attempt has been made to present a complete coverage by having various contributors write separate chapters that are concerned with the many physiologic and pathologic aspects of water and electrolyte balance. For example, there is a discussion of changes in congestive heart failure, in liver disease and in a number of other pathologic states, as well as a consideration of the normal physiology. Because of the presentation by several authors, occasionally there are overlaps and disagreements about some of the basic principles. Therefore, the reader is cautioned to look for variations of opinion about some of the aspects of this very important physiologic phenomenon. If there had been more precise editing, though the subject is a large one, repetition could have been eliminated, and the book could have been made less voluminous.—*M. E. Alberts, M.D.*

BOOKS RECEIVED

CROSSEN'S SYNOPSIS OF GYNECOLOGY, SIXTH EDITION, by *Daniel Winston Beacham, M.D.*, and *Woodard Davis Beacham, M.D.* (St. Louis, C. V. Mosby Company, 1963. \$7.50).

THE HISTORY AND EXAMINATION OF THE PATIENT, PHYSICAL DIAGNOSIS, SECOND EDITION, by *John A. Prior, M.D.*, and *Jack S. Silberstein, M.D.* (St. Louis, C. V. Mosby Company, 1963. \$8.50).

THE CARE OF THE RHEUMATOID HAND, by *Adrian E. Flatt, M.D.* (St. Louis, C. V. Mosby Company, 1963. \$11.50).

Evaluation of Adolescents' Problems at AMA Clinical Meeting

Practical approaches to everyday problems in adolescent patients will be the feature of a symposium on the program of the 17th Clinical Meeting of the American Medical Association December 1-4 at Portland, Oregon.

Other scientific subjects to be covered by speakers during the four-day meeting include: heart and blood-vessel surgery; peptic ulcer; the practical clinical approach to anticoagulants, metabolic obesity, anemia, edema and undiagnosed fever; urology; obstetrics and gynecology; trauma as it relates to everyday noises; smoking in relation to mortality and morbidity; and causes of death in automobile accidents.

Dr. Joseph B. Trainer, of the University of Oregon Medical School, working closely with the AMA Committee on Medical Motion Pictures and Television, has announced that varied and extensive live, closed-circuit television programs will be shown to physicians during the clinical meeting. Thirty physicians, most of them from Portland, will take part in this program, and it will cover: eye examinations; resuscitation techniques and their utilization in surgery, obstetrics, and in coronary disease; psychiatric evaluation of the alcoholic; a tumor clinic session; the crippled child; and the diagnosis and surgical approaches to the relief of deafness.

Another outstanding attraction will be a symposium on "Genes, Chromosomes and Immune Mechanisms" held on Monday, December 2, the second day of the meeting. The same subject will be covered in a guest lecture on Tuesday morning by Rupert E. Billingham, Ph.D., of the Wistar Institute, Philadelphia, a world authority on tissue immunity. He collaborated with Peter Brian Medawar, of London, who won the Nobel Prize in Medicine in 1960.

Immunization, with special emphasis on the viruses, will be covered on Tuesday's program, along with cancer of the breast.

Outstanding authorities in the diagnosis and treatment of breast cancer will exchange ideas and discuss the newest forms of treatment. The physicians are Ian Macdonald and Richard Martin of the M. D. Anderson Hospital in Houston, and Dr. Maurice Lenz, emeritus professor of radiology at Columbia Presbyterian Hospital, New York.

Also on Tuesday a number of outstanding specialists will discuss the surgical aspects of infection.

Another highlight of the scientific program will be a day-long Tuesday program on kidney problems, including the newest thoughts on kidney acid-base control. A renal symposium will include an airing of the principles of intermittent dialysis as well as the socio-economic problems associated with keeping such chronic uremic patients alive.

Iowa Association of Medical Assistants

Seventh Annual National Convention American Association of Medical Assistants

EDEN ROC HOTEL, MIAMI BEACH, FLORIDA
OCTOBER 9-13, 1963

The 1963 convention program provides intensive educational sessions and workshops designed to help each member become more proficient in her job and better versed in the field. It includes special social events, and allows her ample time for fun and fellowship.

Approximately 160 medical assistants plan to take examinations for certification as a Medical Assistant, Administrative; Medical Assistant, Clinical; or Medical Assistant, Administrative and Clinical. These examinations will be given simultaneously in Miami Beach, Florida, Lawrence, Kansas, and Fullerton, California.

Outstanding speakers have been chosen to address the various educational sessions, and all-in-all, a splendid program awaits the delegates and members attending the convention.

TUESDAY, OCTOBER 8

Board of Directors Meeting

WEDNESDAY, OCTOBER 9

Board of Directors Meeting

House of Delegates Convenes

Reference Committee Meetings

THURSDAY, OCTOBER 10

House of Delegates Meeting

Delegates' Luncheon

FRIDAY, OCTOBER 11

GENERAL SESSION

Speakers: William Mixson, M.D., OB-Gyn, Florida;
Mr. Jack Johnston, AAMA Insurance Administrator.

State Luncheon—State Presidents honored

Social Hour

Dinner and complimentary floor show

SATURDAY, OCTOBER 12

Workshops: Publications, Electronic Bookkeeping,
Certification, Education

Luncheon: Speaker, Edward Annis, M.D., President,
American Medical Association

Wyeth Leadership Symposium on Mental Health
Panel presentation: Moderator, Jack Rothstein,
Wyeth Laboratories. Speakers: William F. Sheeley, M.D., American Psychiatric Association;
Ner Littner, M.D., Child Therapy Institute;

Charles Carter, M.D., Director Sunland Training Center; John Ainslie, M.D., University of Florida.

Cocktail Party, compliments of the Eden Roc Hotel
Installation Banquet: Speaker, Warren Quillian, M.D., President, Florida Medical Association

SUNDAY, OCTOBER 13

Continental Breakfast

Close of Convention

IAMA has sponsored a Medical Assistants' excursion flight leaving Chicago on Sunday, October 6 and returning in two sections—the first leaving Miami Beach on Sunday, October 13 and the second leaving Miami Beach on Wednesday, October 16. The second flight will accommodate members who are taking the post-convention vacation jaunt to the Bahamas, leaving Miami Beach on Sunday, October 13 and returning October 16.

Members from Illinois, Indiana, Wisconsin and Iowa will participate in the excursion flight from Chicago to Miami Beach planned by IAMA. The Bahama flight has been planned by the AAMA Convention Committee.

—HELEN G. HUGHES

Guides to the Evaluation of Permanent Impairment

Announcement has been made of the availability of the fifth in the series of "Guides to the Evaluation of Permanent Impairment" developed by the AMA Committee on Medical Rating of Physical Impairment, and authorized for publication by the AMA Board of Trustees. It is entitled "The Central Nervous System."

This guide, like all of the others in the series, has been designed primarily for use by physicians. Like the others, however, it is of interest and of use to all who are concerned with the medical, administrative or judicial aspects of programs for the disabled.

The other published guides in the series deal with the extremities and back, the visual system, the cardiovascular system, and the ear, nose, throat and related structures.

A limited number of copies of the guides may be obtained without charge upon written request to the AMA Committee on Medical Rating of Physical Impairment, 535 North Dearborn Street, Chicago 60610.

THE DOCTOR'S BUSINESS

How Does Your Net Worth Compare With the Average?

HOWARD D. BAKER

Waterloo



Last month, I pointed out the really tremendous advantage of which a man can avail himself by starting his savings and investment program early. With the thought that each of you would like to compare your financial achievements with the average of a considerable group of professional men—physicians and dentists practicing in the Midwest—we have just completed a survey of our clients' net worth data. The detailed results show how many of them have farms, oil property, rental property, medical buildings, stocks, residences, cash and bonds, and the amounts of investments in each of these classifications, by age group.

Following is a summary of the "averages."

FINANCIAL DATA ON PHYSICIANS AND DENTISTS, BY AGE GROUPS

Age	Percentage of Clients	Average Assets	Average Liabilities	Average Net Worth
Under 35	16%	\$ 67,930	\$22,370	\$ 45,560
36-40	25%	81,170	23,830	57,340
41-45	19%	109,450	23,270	86,180
46-50	16%	119,310	19,230	100,080
51-60	19%	151,200	17,480	133,720
Over 60	5%	130,770	12,300	118,470

Our "average client" is 44 years of age, has \$106,400 of assets (including professional accounts), \$21,040 of liabilities, and a net worth of \$85,360. This figure does not include furniture and personal property, life insurance cash values, or unrealized

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

appreciation on investment assets, all of which probably amount to another \$30,000, increasing his net worth to over \$115,000. This average doctor owns a residence that cost him \$33,500, and has "productive" assets in his estate totaling about \$72,000, including a professional building and his dental or medical equipment.

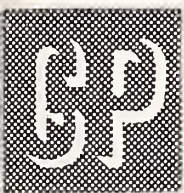
THESE MEN MADE AN EARLY START AT SAVING THEIR MONEY

From these summary figures, it appears that the greatest economic gains are made by professional men between the ages of 50 and 60 years, but that significant progress also is made by those between 41 and 45 years of age. Those in the age brackets 36-40, 46-50 and over 60 appear to be least productive. It was surprising to find that though our youngest age group had sizeable debt loads, the average does not increase significantly. Indeed it is decreased 50 per cent, to the \$12,000 level, at around age 60.

The ratio of assets to liabilities for the average doctor at each of the various ages demonstrates constant progress, for though it is only 3 to 1 at ages under 35, it increases remarkably to over 11 to 1 at ages beyond 60—an improvement of over 350 per cent.

Regarding specific types of investments, some interesting facts were disclosed. After discounting professional accounts receivable 20 per cent for uncollectibility, we found that their average value was approximately \$16,000. The doctors' average practice assets were about \$14,000, including buildings and leasehold improvements, and their average stock and investment-fund holdings were worth \$21,000.

The survey disclosed that 86 per cent of our clients have stock or investment-fund shares; rental property is owned by 15 per cent; only 10 per cent own farm property; and 4 per cent have oil ventures of one kind or another.



Iowa Chapter of the American Academy of General Practice

AAGP Accreditation of Postgraduate Courses

The American Academy of General Practice has long had as its major and distinctive requirement that its members must have completed 150 hours of accredited study during the immediately preceding three years in order to be eligible for renewal of membership. That requirement is to remain unchanged, but effective January 1, 1964, the Academy has made its rules more explicit as regards applications from medical schools and other organizations for accreditation of their forthcoming courses and meetings, and it would like help from AAGP members in publicizing them.

POSTGRADUATE COURSES AND SCIENTIFIC MEETINGS

As in the past, a minimum of 50 hours—of the 150 that each member must report in order to establish his eligibility for renewal of membership—must come from the following:

1. Any postgraduate course originated and given directly by an accredited medical school, provided that an application for accreditation was submitted at least 30 days in advance to the chairman of the state chapter's committee on education, on AAGP form No. 102, for forwarding to the regional advisor of the AAGP Commission on Education, and that approval has been granted.

2. The AAGP Annual Scientific Assembly, the AAGP Invitational Scientific Congress, and any course originated and presented directly by the AAGP, its constituent state chapters, or the state chapters' component chapters, provided that an application for accreditation has been submitted to the chairman of the state chapter's committee on education, on AAGP form No. 102, for forwarding to the regional advisor of the AAGP Commission on Education at least 30 days in advance of the meeting, and provided that approval has been granted.

3. The annual scientific assembly of each state chapter, provided that an application for accreditation was submitted at least 30 days in advance to the chairman of the state chapter's committee on accreditation, on AAGP form No. 102, for forwarding to the regional advisor of the AAGP Commission on Education, and that approval has been granted.

The remaining 100 hours, a member may acquire through other activities, as follows:

1. Attendance at other medical programs accredited by the AAGP. These will be approved if, after review, they promise to be of high educational and medical standards and if applications for their accreditation have been submitted, on AAGP form No. 102, 30 days in advance, to the regional advisor of the AAGP Commission on Education. Such meetings will be granted hour-for-hour accreditation based upon their actual scientific content.

2. Publication of an original scientific paper in a state or national medical journal. This will entitle a member to 10 accredited hours.

3. Presentation of an original scientific paper to a medical audience at the county level or above. This will entitle him to 10 accredited hours.

4. Preparation and presentation of a scientific exhibit at the state level or above. This will entitle him to 10 accredited hours.

5. Attendance at hospital staff meetings and county medical society meetings. These are granted credit on an hour-for-hour basis, and prior approval of the programs is not required.

CORRESPONDENCE STUDY

Medical school correspondence study will be accepted for accreditation when a medical school certifies that the AAGP member has successfully completed the course, as evidenced by passing a written examination given by the school. The number of hours' credit for a particular course will be based upon the figure given by the school, subject to the approval of the AAGP Commission on Education in assembled meeting. No member will receive more than a total of 15 hours' credit from correspondence courses in any three-year period. No carry-over correspondence study credit will be permitted. A written examination for a medical school correspondence course must be completed within six months after receipt of the final lesson. Only correspondence courses given by approved medical schools will be considered for accreditation.

MISCELLANEOUS

Programs developed in one area and presented in another may be accredited only by action of the AAGP Commission on Education in assembled meeting.

Credit for study in foreign countries will be considered on an individual basis. A member should file his claim with his state chapter educa-

tion committee chairman, and the chairman should forward his recommendation to the regional advisor for a ruling regarding its acceptability for accreditation.

Credit for teaching as a preceptor will not be allowed.

No credit will be allowed for military training required to maintain reserve officer status in the Armed Forces.

PROCEDURE FOR ACCREDITATION OF PROGRAMS

As has been explained above, all requests for accreditation of programs must be submitted on the proper AAGP form through the established channels of the Academy and its constituent state chapters, commissions and committees on education. The forms must reach the regional advisors at least 30 days prior to the scheduled dates of the programs.

The chairman of the state chapter's education committee will make his recommendations to the regional advisor of the AAGP Commission on Education. The regional advisor may or may not follow that recommendation in granting or refusing accreditation.

No exceptions to the outlined procedure will be permitted, and no requests for retroactive accreditation will be granted. In the event of a disagreement on accredited hours, an appeal may be made to the full Commission in assembled meeting.

STATEMENT OF ACCEPTANCE

Printed and verbal publicity for a program that has been granted accreditation must be presented in this exact form and no other: "This program is acceptable for — accredited hours by the American Academy of General Practice."

MAXIMUM HOURS

Maximum hours of credit will be based upon actual hours of scientific program content. No credit will be allowed for viewing scientific exhibits. Members attending accredited programs will report and receive credit for the actual number of hours attended.

The Commission on Education has developed and published certain rules relative to accrediting courses and programs. They are as follows:

All courses or programs must be of high educational, ethical and medical standards.

Teaching Aids. The Commission believes that films, kinescopes, tape recordings, radio conferences and television are all teaching aids which may be used in developing and conducting postgraduate programs. It believes it is neither necessary nor desirable to accredit or list individual films, kinescopes, tape recordings, radio conferences or television programs, or the organizations that produce or distribute them. The program in which these aids are used should be judged on its merit. Local groups in the more remote districts should be encouraged to use these teaching aids in developing their programs.

COOPERATION REQUESTED

Many medical schools and other organizations that conduct courses, scientific meetings, clinical conferences and seminars of interest to general practitioners are unaware of the Academy's definitions and policies as regards accreditation of programs. Too often, these organizations develop and announce programs, and only then seek accreditation. The directors of the sponsoring organizations point out that their program is designed to provide instruction in areas of interest to general practitioners, and that the instruction will be of high quality, but at that stage of production it may be too late for the AAGP to grant the requested accreditation.

The above-mentioned requirements for prior accreditation of programs are to become effective January 1, 1964, and state chapter officers and all other members who have contact with faculty members of medical schools or with officers of other medical organizations and related health groups should bring them to these people's attention.

If there can be more cooperation between the Academy's local and state chapter officers and the personnel of organizations producing postgraduate courses, many misunderstandings regarding acceptable study for AAGP members can be avoided. Too often a request is received at Academy headquarters for accreditation after the program has been announced.

Mercy Medical Day

October 26, 1963

Mercy Hospital, Des Moines, Iowa

The program for Mercy Hospital Medical Day, on October 26, begins at 1:30 p.m., and consists of the four speakers participating in a seminar.

"Autoimmune Hemolytic Anemia"

Israel Davidsohn, M.D., Director, Department of Pathology, Mount Sinai Hospital, Chicago, Illinois

"Hypersplenism"

B. J. Koszewski, M.D., Head, Section of Hematology, Department of Medicine, Creighton University School of Medicine, Omaha, Nebraska

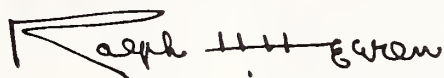
"Anemia: The Masquerader"

Donal Dunphy, M.D., Professor and Chairman, Department of Pediatrics, State University of Iowa, Iowa City, Iowa

"The Role of the Surgeon in the Problem of Anemia"
Sidney E. Ziffren, M.D., Department of Surgery, State University of Iowa, Iowa City, Iowa

The evening program begins with a social hour at 6:30 and is followed by a banquet at 7:15 at Hotel Fort Des Moines. The evening speaker will be George M. Knauf, M.D., Director of Space Medicine, Office of Manned Spaceflight, NASA, Washington, D. C. His topic is "Medicine in Space Flight."

STATE DEPARTMENT OF HEALTH



RALPH H. HEEREN, M.D., ACTING COMMISSIONER

Morbidity Report for Month of August 1963

Diseases	1963 Aug.	1963 July	1962 Aug.	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	104	110	77	Dubuque, Johnson
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	26	203	48	Dubuque, Scott
Whooping cough	30	6	3	Greene
Brucellosis	13	8	10	Dubuque, Linn
Chickenpox	17	124	13	Scott
Meningococcic meningitis	1	1	0	Appanoose
Mumps	101	133	78	Boone, Dubuque, Polk, Scott, Story
Poliomyelitis	0	0	0	
Infectious hepatitis	22	17	25	Polk, Scott, Tama, Wood- bury
Rabies in animals	27	46	19	Clayton, Jefferson, Johnson, Story, Washington, Web- ster
Malaria	0	1	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	58	33	32	For the state
Syphilis	99	48	87	For the state
Gonorrhea	168	84	103	For the state
Histoplasmosis	6	0	0	Cerro Gordo
Food intoxication	0	0	4	
Meningitis (type unspecified)	1	0	0	Polk
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	1	1	
Salmonellosis	8	22	2	Johnson
Tetanus	0	0	1	
Chancroid	0	0	0	
Encephalitis (type unspecified)	0	0	0	
H. influenzal meningitis	0	0	0	
Amebiasis	1	1	0	Dickinson
Shigellosis	2	0	0	Dubuque
Influenza	0	0	3	

The Earlham Care Program

Because of advances in the health and social sciences, acute and communicable diseases have recently been replaced as the leading causes of death. Now the long-term and degenerative diseases are the fatal ones—ones such as heart disease, cancer, strokes and other circulatory conditions. The numbers of aged people have increased rapidly, and with this change has come a greater demand for health-care services. As a result, the cost of hospital facilities has increased three times as rapidly as has the population. Communities have had to seek ways of providing care for their chronically ill and aged. Over a century ago, home care was the method of choice in this country. Then, as hospitals became safe, home care was ignored. Now that the necessity for it has again arisen, home care programs have developed throughout America.

The merits of home care programs are many. The cost is no more than one-fourth or one-fifth that of hospital care. Home care can prevent or shorten hospitalization. It may prevent rehospitalization. It may postpone or even obviate institutionalization. It can provide rehabilitative services and palliative care for selected patients. It isn't necessarily a second-best care; rather, it is first-choice for certain types of patients. The individual cared for at home is happier and is surer of retaining his dignity. He is assured a more nearly normal life, and he responds more satisfactorily to therapy, in many instances.

The Earlham Care Program, which is now operational, is an attempt by a small community in rural Iowa to provide home care for its senior citizens and for others needing such service. Earlham is located about 30 miles west of Des Moines, in Madison County. It has a population of about 800, and serves an area with a population of about 2,000. A recent survey revealed that about 17 per cent of these people were over 65 years of age. Realizing that the absence of a coordinated home care program for the aged and chronically ill in their own homes was a serious gap in the community's services, the townspeople have developed a pilot home-care project. A nine-member board of directors administers it, meeting regularly to set policies and to act upon reports of the program director.

The services provided in the Earlham Care Program are as follows:

1. *Nursing.* A coordinated home nursing service has been made available, for the first time. The nurses carry out recommendations from physicians for nursing care in the patients' homes; provide instruction for family members in patient care; report back to the physician; and make necessary arrangements for other recommended health procedures. They provide knowledge and guidance for the entire program.

2. *Homemaker service.* Trained and paid homemakers provide some of the personal-care services required by the aged and chronically ill or handicapped patients in their homes, so that they can get along satisfactorily there. Homemaking tasks include cooking, light cleaning, light laundry, mending, shopping and personal-care services that family members would ordinarily do. Primarily, this service will maintain household routines and sustain wholesome family life during periods of illness or disability. Homemaker services vary both in type and in duration. One patient may need only a half day per week for a definite period; another may need a half or full day of service at regular intervals indefinitely; and another may require 24-hour service for an emergency period.

3. *Meals on wheels.* Meals are provided at low cost for people unable to prepare them. These are prepared in a local restaurant. When therapeutic diets are required, the meals are planned by a dietitian to make sure that the patients receive well-balanced, adequate nourishment.

4. *Friendly visitation.* The program will include a systematic series of visits by volunteers, to demonstrate the community's continued concern for the patients, and to ascertain their needs and report back to the program director.

5. *Communication service.* In certain cases, the chronically-ill or aged and homebound will be telephoned regularly for purposes similar to those which are served by the friendly visits.

6. *Activity center.* The program is presently housed in the bank building, but will soon move into its new quarters, where space will be available for recreational and therapeutic activities. It will also serve as a meeting place for the persons receiving these services, if they wish to get together.

7. *Transportation.* There is no public transportation at Earlham, or between it and other towns, but volunteers are undertaking to provide transportation, when necessary, for the people served by the program.

Fees are charged for some of the services in this program, and they are based on the costs and on the patient's ability to pay. Services are not denied to those unable to pay. The Earlham Care Program is, therefore, financed by the fees collected, through donations, and through assistance from the Iowa State Department of Health. It was set up on a demonstration basis for an anticipated five years. It is expected that as the benefits of the program become apparent, there will be in-

creasing local support, and that eventually the entire program will be maintained out of local funds.

There is a very definite need for programs such as this throughout Iowa. The community of Earlham is demonstrating what can be done when this need is realized.

A home care program has been operating in Polk County for 1½ years, altogether successfully, and similar ones are being developed in Davenport, Sioux City and Burlington.

How about your town?

Des Moines Population Study of Glaucoma

Glaucoma ranks second among the causes of blindness in the United States today, afflicting an estimated 2 per cent of persons over 40 years of age. No specific preventive measures are presently available, but most cases are amenable to therapy if diagnosed early, preferably before the onset of overt symptoms. Thus the early recognition of glaucoma can reduce its role as a leading cause of blindness.

The Five-Year Des Moines Population Study of Glaucoma, initiated by the State Department of Health in 1958 and completed in 1962, was highly successful in evaluating tests for the early detection of the disease. Six hundred eighty-three persons who thought they had normal eyes and were asymptomatic for glaucoma volunteered for the study. Ten different tests were performed on those volunteers at yearly intervals for five years. There were two main categories of those tests: (1) those pertaining to intraocular pressure and its dynamics, and (2) those pertaining to visual function.

The results of a test or a combination of two or more tests could be compared and evaluated. A fairly good estimate could then be made of their value in the early diagnosis of glaucoma.

From the initial five-year study it was learned that tests of pressure alone detected only a fraction of those suffering from incipient glaucoma, the reason being that intraocular pressure is variable both in normal and in glaucomatous eyes. This point is highly significant, since all mass screening heretofore has been done by means of pressure tests. The study showed that a minimum of two tests are required—one pressure and one visual.

The incidence of glaucoma was found to be higher than had previously been reported. Eight per cent of the volunteers proved to have treatable glaucoma, even though they had no eye complaints. These results, presented at various national research meetings, have stimulated considerable interest at the national level, and the United States Public Health Service has approved new funds for continuing the research for another five years.

The objective of the continued program is to "evaluate further the predictive power of tonometer tests from the standpoint of the presence or the future development of the visual field defect

of glaucoma as well as to establish the reliability and feasibility of visual field testing in a mass screening project."

Twenty-five hundred volunteers over 21 years of age with no ocular complaints will be screened in the first year by tonometry and visual field tests. A smaller sample of this group will be selected for long-term follow-up. The sample will consist of those volunteers with extreme values in the tonometer tests or those who show signs of the glaucoma field defect. It is estimated that about 500 persons will fall into these categories. There will also be continued follow-up of the 683 volunteers who have been participating over the past five years.

The Iowa State Department of Health and the Department of Ophthalmology at the State University of Iowa College of Medicine will cosponsor the study, in cooperation with the Des Moines-Polk County Health Department, the Public Health Nursing Association and the Des Moines Council of Social Agencies. The tests will be under the supervision of Mansour Armaly, M.D., associate professor of ophthalmology, State University of Iowa.

It is estimated that about 100 volunteers per day will be screened, and that the screening period will take up about six weeks during each year.

The recruiting of volunteers with no ocular complaint and over 21 years of age is presently under way. This is being done by the secretary of the Health Division of the Des Moines Council of Social Agencies, with the cooperation of several civic, business and other community groups. The continued success of this program has shown the value of a coordinated effort of major service organizations and the participating civic groups and agencies.

The Red Measles Vaccine

There is a disagreement among Iowa physicians about the recently developed measles vaccine. Dr. Ralph Heeren, Director of the State Health Department's Communicable Disease Division and acting health commissioner, has stated that "this would be a good time to get measles immunization." Health authorities are most anxious to have infants under one year old protected by the new vaccine as they run more hazards when exposed to measles. They are especially susceptible to pneumonia and other respiratory complications. Another group, for whom measles vaccine is especially important, includes children weakened by rheumatic fever, diabetes or asthma. Such children should be protected from any severe illness. Even

healthy, husky children, however, run a risk of complications with measles.

A strain of measles virus was isolated in 1954 by Dr. John Enders, of Harvard University, and his associate, Dr. Thomas Peebles. From this virus strain, two vaccines have been developed, one using a killed virus, the other using a weakened live virus. The Iowa Health Department and the U. S. Public Health Service recommend use of the live-virus vaccine in normal circumstances. One shot of the live-virus vaccine is said to give good protection, lasting about four years, for 95 out of 100 children. When given alone, the live-virus vaccine causes some fever and a measles-like rash in about three out of ten children. This reaction is reduced when the measles shot is accompanied by a shot of gamma globulin.

Dr. Heeren stated the new vaccine will replace gamma globulin as medicine's defense against the serious effects of red measles.

The vaccine, although readily available in Davenport, is not being recommended by many physicians in this area, according to Dr. T. W. McMeans, spokesman for the Scott County Medical Society in a statement made on August 19. That the vaccine is generally "hard on people" is the explanation for its limited use. He added that the vaccine had been used in a few cases in the county and that it had produced a "reaction" in the patients.

When the vaccine first appeared on the market in March, the oral polio vaccine series was also being offered in Davenport. Dr. McMeans said that the two vaccines cannot be taken at the same time as it could bring on another reaction. One of the vaccines could cancel out the effectiveness of the other.

Northeast Iowa Clinical Conference

The annual Northeast Iowa Clinical Conference is to be held on Thursday, October 24, this year, at Clayton House, 300 W. Mullan Avenue, in Waterloo. The program, which the American Academy of General Practice has approved for five hours of Category I credit, will be as follows:

Dr. Gilbert Clark: "Recent Advances in Diagnostic Laboratory Medicine"

Dr. William Ashe: "Medical Problems Presented by Aero-space Age"

Dr. Bernard Spencer: "Emergent Surgery of the Newborn"

Dr. Charles Blackburn: "Chemotherapeutic Treatment of Malignant Disease"

Dr. William Paul: "Advances in Research and Treatment of Arthritis and Rheumatism"

Dr. Richard Eckhardt: "Management of Cirrhosis of the Liver and Its Complications"

The Iowa Division of the American Cancer Society is cosponsoring Dr. Blackburn's presentation. There is to be no registration fee, and a special program is being arranged for doctors' wives.

New Telephone Number for the
STATE DEPARTMENT OF HEALTH
281-5011



Woman's Auxiliary News



Firearms and Children

On several occasions in or near Des Moines during the past year, children have killed playmates with guns that their parents didn't know they possessed, or with ones to which their parents weren't aware that they had access. Accidents of these sorts, and ones resulting from the misuse of dangerous hunting practices by untrained children or teenagers, are commonplace throughout the rest of the state, as well. It is high time that the Woman's Auxiliary and similar civic-service groups took steps to prevent them.

The *READER'S DIGEST* for July, 1963, contains an article condensed from a recent issue of *PARADE* calling attention to the ease with which youngsters can buy pistols and even more inappropriate weapons. It tells of a man in Washington, D. C., who found that his 15-year-old son had a .38 caliber double-action revolver made for the British Commandos during World War II. It fires a low-velocity bullet that is deadly at close range, and can knock a man down at 15 yards. The boy had seen it advertised in a comic book, and had paid \$12.88 for it, including shipping charges.

A 16-year-old boy in Fairfax, Virginia, the article says, accidentally shot and killed a 14-year-old companion with a snub-nosed .38 which he had bought for \$29.95 plus shipping charges from a Los Angeles mail order house. When told about the tragedy, the dealer shrugged and said, "If they've got the money, I sell them the gun. I'm not responsible for what they do with it."

The article points to a serious need for national legislation to prevent such sales of guns. At present, though it is illegal to ship firearms through the mails, there is nothing to prevent anyone's sending them by other means. Indeed *REA Express*, as a common carrier, cannot refuse to transport any legal commodity, and the Internal Revenue Service must issue licenses to dealers wishing to ship arms across state lines.

Comic books and the more sensational magazines, the article declared, are packed with advertisements asking teenagers "How'd you like to be the most accurate and fastest gun alive?" and offering a "lightning" revolver for \$5 down. Or for \$49.95, youngsters can buy a .45 submachine gun. To avoid a \$200 transfer tax, the barrel has been plugged, but the ad says this has been done

"neatly," and that "the gun can be readily disassembled for study." Actually, the gun can be put into firing condition in 20 minutes. Replicas of the Wild West derringer are being turned out by the thousands in basement workshops at a cost of about \$5 each, and are being sold in the United States for prices up to \$19.95.

Currently there are no federal or state laws prohibiting the shipment of firearms, but seven states (Massachusetts, Michigan, Missouri, New Jersey, New York, North Carolina and Tennessee) and two cities (New Orleans and Chicago) impose some restrictions.

Aside from advocating the passage of laws to hamper or prevent the sale of firearms to juveniles, there are several actions in which Auxiliary chapters can take the lead. First, along with advocating the safe storage of medicines and household compounds containing dangerous ingredients, Auxiliaries and their individual members can publicize the need for keeping guns and ammunition out of the reach of small children, and of keeping such weapons disassembled between hunting trips or target-practice sessions. Second, Auxiliaries can help to organize clubs or classes in the proper use of guns, and can persuade their communities about the need for providing supervision for all young hunters. Organizations like the National Rifle Association and Junior Rifle Clubs are happy to assist in such projects.

Programs and Projects

Auxiliaries are not independent organizations, but rather are allies of the AMA, the Iowa Medical Society and the county medical societies. It cannot be overemphasized that any activity of the Auxiliaries must have the approval of the medical society at the corresponding level. The Auxiliaries do not affiliate but do work with other organizations, with the approval of the advisory committee of the medical societies at their respective levels. Any cooperative work that they plan to undertake with other organizations, it should be carefully noted, must first be approved.

Program materials are available from the National Auxiliary and from the AMA, as well as from the State Medical Society office in Des Moines. The use of materials from other organiza-

tions, please note, should first be reviewed by the advisory committee of the respective medical society.

COMMUNITY SERVICE

As Auxiliaries and as individuals, doctors' wives help to implement medicine's concern for the welfare of each geographic area. As helpmates to your husbands and as assistants to the medical profession, you endeavor to meet the health needs of the people in your communities. Since service is the tradition of doctors of medicine, it therefore becomes your tradition.

If you "Serve and Communicate," you can become known as good citizens and leaders in promoting community health. The totality of community effort made by the doctor and his wife helps to improve the public's attitude toward the medical profession.

Serve by cooperating with other community groups in meeting community health needs.

Communicate with other organizations, telling them of medical society and Auxiliary health programs, information, printed matter and speakers that are available.

Special projects in your community should be given a prominent place in your Auxiliary's plans, for they can be shaped to meet the particular needs of your county. Keep flexible, so that you can start new projects if need be.

A New Form of Segregation

The editors of the WALL STREET JOURNAL, like many of the rest of us, are growing a bit grey around the temples but resent being referred to as "senior citizens." They not only dislike the patronizing tone of that appellation—calling it a euphemism like *mortician*, which is favored by people who don't like to call a spade a spade—but also suspect the motives of the Kennedy administration in popularizing it. "We are not so young as to be insensitive to the problems of aging," they declare, "but we don't want anybody calling us senior citizen as though we were something set apart from our fellow man."

"The segregation thread runs through much more than the President's discussion of medicare, though that is an extreme example," their editorial continues. "Discounting the tremendous expansion of private and public health care for all people, including the aged, Mr. Kennedy dogmatically insists on his compulsory Social-Security approach for those over 65. Whether or not it is an opening door to socialized medicine, as it may well be, it is surely about the most costly and inefficient scheme imaginable.

"Then consider some of the government's other plans for putting old people in a special category:

"More food and drug protection for the elderly. Special tax benefits for the elderly. 'Improvements' in general old-age assistance, including federal intrusion in the private matter of their handling of money. A new five-year program designed to stimulate employment opportunities for the aged—at a time when more and more companies are opening up just such opportunities.

"There is to be much more housing assistance as well. It would include aid for construction of 'specially designed' housing for the elderly (no segregation intended, of course). It would make single old people eligible for 'moderate income' housing, by which interesting category is meant people whose incomes are too high for public housing but too low for private housing.

"Men can debate the merits of any of these and other specific proposals. But take the message as a whole and it is impossible to avoid the unpleasant impression that old people as a class are being treated as incompetents whose only hope is to become wards of government."

The newly-installed president of the United States Chamber of Commerce, in a series of speeches before organizations throughout the country, is calling attention to the immorality of the constant raids on the U. S. Treasury by our senators and representatives in order to continue and to enlarge military installations and defense industries in their respective districts, knowing that there is no surer way to assure their own reelection. The editors of the WALL STREET JOURNAL maintain that Mr. Kennedy is doing the same thing—attempting to curry favor with a large group of voters, regardless of the actual needs of the persons to be benefitted, and regardless of the cost to the American people as a whole. In this instance, they maintain, he is not only attempting to make older people, as a class, into a vested interest, but quite unjustifiably is encouraging everyone to pity them.

Community Health Week October 20-26

The American Medical Association has designated the week of October 20-26 as Community Health Week for the nation. Appropriate releases will be provided to the press regarding medicine's contribution to the nation's health. Physicians and their wives should take this opportunity to publicize the local, county or state projects their organizations have developed in the public interest, such as health fairs, science fairs, immunization campaigns, health career information programs, auto seat-belt installation campaigns, poster and slogan contests, and other health programs which meet the needs of their communities.

Fall Board Meeting

The Woman's Auxiliary Board will meet in the conference room of the Iowa Medical Society Building, 529—36th Street, Des Moines, on **TUESDAY, OCTOBER 29** at 9:30 a.m. Board members are asked please to note the date, since a change has been made from the date set last spring.

The Annual Meeting of the Planning Committee will also take place at the Iowa Medical Society Building, Des Moines, at 10:30 a.m., on **MONDAY, OCTOBER 28**.

Schedule for 1963 District Meetings

District VI—Councilor: Mrs. R. O. Bailey, Waterloo

October 16: Waterloo, Black's Tea Room, 12:30 p.m.

Hostess Auxiliary: Black Hawk County

President—Mrs. L. L. Zager, 121 Kenway Road, Waterloo

District VIII—Councilor: Mrs. J. E. Bishop, Davenport

October 17: Davenport, Outing Club, 12:30 p.m.

Hostess Auxiliary: Scott County

President—Mrs. R. W. McConnell, 218 Forest Road, Davenport

District I—Councilor: Mrs. M. F. Kiesau, Postville

October 23: Postville, V & J Dining Room, 1:00 p.m.

Hostess Auxiliary: Allamakee County

President—Mrs. C. R. Rominger, 604 Allamakee Street, Waukon

District VI—Councilor: Mrs. C. E. White, Independence

October 24: Dubuque, Dubuque Golf and Country Club, 1:15 p.m.

Hostess Auxiliary: Dubuque County

President—Mrs. C. M. Strand, 2785 Pennsylvania, Dubuque

If you live in one of the above districts, please return your reservation card indicating you *will* be present.

Conferences for Health Careers Clubs

Area conferences for Future Nurses Clubs and Health Careers Clubs will be held in three Iowa cities on Friday, October 18. Each organization may send four representatives from the eleventh and twelfth grades, plus its advisor and/or sponsors, to the meeting most convenient for them to attend.

The Eastern Area Conference will be held in Amphitheater E331, University Hospitals, and registration will begin at 9:00 a.m. Lunch, at the Quad Cafeteria, will be "Dutch." Reservations should be made in advance with Mrs. J. L. Ehrenhaft, 329 Ellis Avenue, Iowa City 52241.

The Central Area Conference will be held at the Pleasant View School, Webster City, and registration will begin at 9:00 a.m. The registration fee of \$1 will cover the luncheon and other expenses of the day. Reservations should be made with Mrs. B. F. Howar, 1008 Boone Street, Webster City 50595.

The Western Area Conference, in Sioux City, will be at Mercy Hospital, with St. Vincent's, Methodist and Lutheran Hospitals sharing sponsorship of the program. Registration will begin at 9:00 a.m., and the registration fee of \$1 will cover the luncheon and other expenses. Advance reservations should be made with Mrs. Henry Boe, 3919 Orchard Street, Sioux City 51104.

Fall Conference

The members of the board of directors of the Woman's Auxiliary to the Iowa Medical Society were invited to attend the IMS Fall Conference for County Medical Society Officers and other Representatives at the Savary Hotel, in Des Moines, on September 18. The response was excellent, since well over 50 per cent of the Auxiliary Board were in attendance. This is an indication that the Auxiliary is anxious to be well-informed on current medical problems and is appreciative of the opportunity to improve its service to American medicine. The Auxiliary is proud to be acknowledged as one of medicine's allies.

An account of the Conference program will be carried in a future issue of the **WOMAN'S AUXILIARY NEWS**.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

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Group Insurance Programs for Members of the Iowa Medical Society

WILLIAM O. PURDY, M.D.
Des Moines

THIS, THE SECOND ARTICLE of this series, will deal with the group disability insurance program established for members of the Iowa Medical Society.

In 1955, after a careful analysis of the group disability income insurance plans available, the IMS Committee on Group Insurance recommended the establishment of such a program for members of the Society. The Society approved its recommendation, and the Commercial Insurance Company of Newark, New Jersey, was selected as the carrier. That firm was experienced in this field, and could provide coverage which was both flexible and comprehensive, at premium rates that were found to be favorable.

Since that time, this group insurance plan has been expanded and broadened by the Company, and the coverage provided has kept pace with changing times and conditions. A wide choice of coverages have been made available to fit the needs of individual physicians.

The following is an outline of the important features of the plan as it exists at the present time. It illustrates the extent and the flexibility of the coverage. The premium charge varies with the amount and type of benefit coverage involved, and also with the age of the insured. Physicians under age 35 receive a 25 per cent reduction from the regular rates.

AMOUNT OF COVERAGE

The amount of coverage available to a member depends upon his age at the time of application, and the policies provide for the payment of disability benefits as low as \$25 per week or as high as \$250 per week under certain conditions.

Dr. Purdy, chairman of the IMS Committee on Group Insurance, is Vice President and Medical Director of the Equitable Life Insurance Company of Iowa. The first in this series of articles appeared in the October, 1963, issue of the JOURNAL, and discussed Blue Cross-Blue Shield coverages available to IMS members and their families.

DURATION OF COVERAGE

A member may select a plan providing for the payment of disability benefits for a period of five years or for his lifetime when disability has been due to accident, and for one, five or seven years, or to age 65 when disability has been due to sickness.

COMMENCEMENT OF DISABILITY BENEFITS

A member may select any one of several types of coverage with varying waiting periods after disability commences and before benefits are available. The plans with the longer waiting periods obviously will require smaller premium charges. For example, he may select first-day accident and eighth-day sickness coverage, or coverage with a waiting period of four, eight or thirteen weeks, or six months. A sickness-benefit waiting period only may be selected, with the accident benefit calculable from the first day of disability.

PERMANENCY OF COVERAGE

The policies are noncancelable by the Company to individual doctors who are in active practice and who are members of the Society. Though the Company does reserve the right to cancel the entire program, it has never canceled coverage for a professional group during its more than 35 years of operation.

CLAIM EXPERIENCE AND ADMINISTRATION

The program is being administered by the Prouty Company, of Des Moines, headed by Mr. William Prouty, who has been in charge of the program since its inception. Any member with a disputed claim may request that it be submitted to an arbitration board set up by the Society and the Company. During the eight years that this program has been in existence, not one claim has been disputed. Indeed many members who have been disabled and who have submitted claims have voluntarily expressed praise for the way in which their claims were processed, and for the prompt payment of their benefits without fuss or delay.

TERMINATION OF COVERAGE

The regular coverage terminates when the covered member attains age 70, when he retires from active practice, when he ceases to be a member of the Society, or when he fails to pay the premium due.

SENIOR MEMBER PLAN

Upon attaining age 70, an insured member who is continuing in full, active practice may request transfer of the same weekly coverage he previously carried, up to a maximum of \$100 per week, to the special Senior Member Plan. This arrangement provides for the payment of benefits for one year for disability due to sickness, and for five years for disability due to an accident. The Senior Member policy may be renewed each year, provided that the insured remains a member of the Society and continues in full, active practice.

NEW MEMBER ENROLLMENT

A new member of the Iowa Medical Society, if he is less than 70 years of age, may apply for up to \$75 per week of disability income insurance with lifetime accident and five-year sickness disability coverage without taking a medical examination or presenting other evidence of his insurability, provided that he submits his application within six months of the start of his membership in the Society.

ADDITIONAL BENEFITS

In consequence of its favorable claim experience with the IMS group in the past, the Company has just announced a new broadening of the plan. Without additional premium, the weekly disability benefits for all insured members will be increased 10 per cent for any covered disability beginning on or after November 1, 1963. This broadened coverage will be continued on a yearly basis, provided that the claim experience is satisfactory to the Company.

NEW COVERAGE NOW AVAILABLE

The Company has just announced that an additional coverage is now available to those insured members who desire it. This is a Loss of Use of Hands rider, which will provide for the payment in a lump sum of 100 times the amount of the weekly disability benefit coverage carried for the accidental loss of the use of either or both hands, either or both arms, or any finger or fingers, if in consequence the insured is wholly prevented from practicing medicine and if loss-of-time benefits have been paid under the policy for one year from the date of injury. The annual cost of this rider, which is available to every insured member, will be \$1 for each \$25 of weekly benefit carried.

SPECIAL ENROLLMENT PERIOD

The Commercial Insurance Company has agreed to a special open-enrollment period of three

months, commencing November 1, 1963, so that members not now insured may have an opportunity to enroll under the program. Every member under age 70 who is actively practicing may enroll for up to \$75 per week of disability income, providing lifetime accident and five-year sickness benefits. If at least 100 members who are not now insured under the plan enroll during this period, the Company will accept all applications for the stated coverage without evidence of insurability.

CONCLUSION

In summary, the Group Insurance Committee realizes that this discussion does not cover all of the details of this disability program. It hopes, however, that this discussion will bring to the attention of the members the fine coverage which those who are enrolled enjoy, and at the same time that it will stimulate those who have not already enrolled to make a careful study of the plan which is available to them and to compare it, if they desire, with other coverages that they may have. For more detailed information, they should get in touch with the Prouty Company, 2124 Grand Avenue, Des Moines 50312.

At the present time, this program has 1,004 members enrolled. Since its inception in 1955, benefits totaling \$454,882.00 have been paid to members of the Iowa Medical Society.

AMA Clinical Meeting

At the AMA Clinical Meeting in Portland, Oregon, December 1-4, the opening day's program will be devoted to the Fifth National Conference on the Medical Aspects of Sports. Another of the highlights will be a full day's session on adolescent medicine. It will include a paper by Harold S. Lillywhite, Ph.D., of the University of Oregon Medical School, on "Learning Problems and School Failures," and one by Adolph E. Christ, M.D., of the University of Washington School of Medicine, on "Social Habits and Delinquency."

Some of the other outstanding speakers and their topics will be: C. H. Stuart-Harris, M.D., of the University of Sheffield, "Shortness of Breath"; Rupert E. Billingham, Ph.D., of the University of Pennsylvania, "Transplantation Immunology"; E. Cuyler Hammond, Sc.D., of the American Cancer Society, "Smoking in Relation to Mortality and Morbidity"; Lee E. Farr, M.D., University of Texas, "Trauma of Everyday Noises"; and Fred M. Davenport, M.D., of the University of Michigan, "Immunization Against Influenza and Adenovirus Infections."

The scientific sessions, exhibits, medical motion pictures and color television will be at the Memorial Coliseum, and sessions of the AMA House of Delegates will be at the Portland Hilton Hotel.



Scientific Articles

Recognition and Management of Anxiety

A Panel Discussion

Dr. Max C. Pepernik: Anxiety is the emotional reaction associated with the anticipation of danger. It has a mental component: that of a haunting nameless fear, dread, apprehension or feeling of panic; and a bodily reaction referable to the thalamus, hypothalamus, sympathetic nervous system and the adrenals. I shall come back to these protean manifestations in a bit.

Some authorities differentiate fear and anxiety. They regard fear as the emotional reaction to a clear, well-defined dangerous person, object, or situation—one which is very likely to cause physical harm to a person. An example might be the emotion experienced by a physician when a narcotic addict is holding a gun on him and is demanding Morphine.

In anxiety, the source of the danger is occasionally unknown, but more frequently it is vague and uncertain, and almost always it is associated with a situation that most people would not regard as physically threatening or dangerous. The danger in this situation seems to have a more personal meaning, and is often related to the subject's uncertainty about himself, to his control, or to the possible outcome of a situation. An example might be the reaction that occurs when one is unexpectedly called upon to get up and make a speech at a meeting.

When anxiety is present in small amounts, it serves a useful protective purpose similar to that of pain. The anxiety is the alarm system that alerts us and calls forth protective mechanisms. It improves our concentration and our learning, it increases our motivation to deal with the difficult or unpleasant situation, and it impels us toward activity. It is like having a good cup of

coffee the first thing in the morning to help us get going.

THE SYMPTOMS OF PATHOLOGIC ANXIETY

Anxiety becomes pathologic when it increases in intensity and duration, and by its chronic repetition interferes with emotional comfort, effectiveness in learning, and the achievement of realistic goals. It may lead to disorders of mental or bodily functions.

There is no absolute amount of anxiety that produces these pathologic reactions, and not all experiences or situations are anxiety-producing to everyone. There are highly individual predispositions, tolerances, and modes of reaction which are relative, unique and dependent on a number of factors including:

1. A person's physical well-being at a given time
2. The stresses in his environment with which he is attempting to cope
3. His genetic and constitutional endowment
4. His prior experiences with similar noxious situations and his learned responses to them.

To illustrate: A man in his early 40's has a family history of hypertension and coronary disease, and he has also witnessed the cardiac death of his father. The man has been working hard in his business and is just beginning to succeed. He is presently on a hunting trip, and on this trip he has been losing more money at poker than he can afford, is staying up late drinking, and is smoking excessively. The next morning's hunt is strenuous. He notes some paroxysmal tachycardia and some shortness of breath. He fears that he is having a coronary. He becomes apprehensive. He recalls his father's death and becomes more apprehensive, and he also realizes that he is far from medical aid. He feels helpless. A vicious cycle is now set into being, and an acute anxiety attack

This presentation was made at the Refresher Course for General Practitioners, cosponsored by the Iowa Chapter of the American Academy of General Practice, at the S.U.I. College of Medicine in Iowa City, last February.

ensues, with the predominant symptoms referable to the cardiac system.

Let me describe these anxiety symptoms somewhat further. We have mentioned the mental component with the prominent symptoms of:

1. A feeling of apprehension, dread or panic
2. A feeling of restlessness, irritability
3. An interference with one's concentration and thinking powers.

The most florid physical symptoms occur in the acute anxiety attack:

1. Palpitation
2. Precordial pain
3. Rapid pulse
4. Feeling of choking or suffocation
5. Hyperventilation
6. Flushing
7. Perspiration
8. Blurring of vision and dilated pupils
9. Feeling of faintness
10. Nausea

This acute anxiety attack comes on abruptly, it is intense, it usually has all of the above symptoms and lasts for several hours, and it is associated with the fear of death or a nameless dread, or a sensation of panic.

In the more chronic anxiety or "tension states," the symptoms listed above may be present, but usually not so vividly, and a number of the symptoms may be absent. Most commonly, the patients speak of:

1. Restlessness
2. Muscle tension—the feeling of being tight all over
3. Occipital or bandlike headaches and pressure
4. Precordial soreness.
5. Sleep difficulty, especially an initial disturbance, and often a broken sleep with nightmares or dreams
6. Urinary frequency
7. Diarrhea or constipation
8. Gastric hyperactivity or belching
9. Eyeaches
10. Sighing respirations
11. Fatigue—which is always the end result of chronic anxiety or tension

Dr. Huston will now talk about the importance of diagnosis in the treatment of anxiety.

DIAGNOSTIC PROBLEMS

Dr. P. E. Huston: Such a bewildering array of symptoms as Dr. Pepernik has listed for you is apt to be confusing, from a diagnostic standpoint. These symptoms may be confused with those of hyperthyroidism, certain forms of cardiac disease, hypoglycemia, diffuse cerebral deteriorating states, drug intoxication, particularly when there are withdrawal reactions, post-infectious conditions such as influenza, endocrine changes associated with suprarenal tumor or the menopause, and some psychiatric conditions, notably *depression*.

It is not my intent here to give a differential diagnosis of such conditions. Suffice it to say that they must be thought of, and appropriate examinations and observations must be carried out to establish the proper diagnosis. To put this point in a somewhat different way, anxiety and its physiologic signs and subjective symptoms may exist as a part of a physical disease, as a reaction to fear concerning the effects of known disease separate from and unrelated to, but coexisting with, physical disease, and finally without any demonstrable physical disease.

A word about diagnosis by exclusion. Preferably, the diagnosis of the anxiety state should not be made solely by ruling out such conditions as hyperthyroidism or pheochromocytoma. A more accurate procedure is an attempt to establish the diagnosis along positive lines, seeking those factors that are commonly found as producers of an anxiety state. Anxiety, as Dr. Pepernik said, is in part a normal response to environmental situations in which there is a feeling of uncertainty concerning the outcome, or as to the individual's ability to cope with the situation. The greater the uncertainty and the more significant the situation for the individual, the more severe the anxiety is apt to be, and in the more severe situations it may pass over into fearful states or even into panic.

We must, then, think immediately of the medical examination itself, which to many persons is anxiety-provoking, as well as of the anxiety factors in the patient's life situation. First, a comment about the medical examination. Getting such an examination, even as a routine annual check-up, is sometimes viewed as an unusual situation with an unpredictable outcome. It is possible that the doctor may find something wrong, and this the patient thinks may be serious, especially if he has been having some kind of symptoms. Or again, if the purpose of the examination is to furnish proof of good health as a part of a job application, or if the examination is to determine the degree of disability for pension or compensation purposes, anxiety may be present. On the other side, as we all know, tactful handling, sympathetic listening and reassurance are associated with a fall in pulse rate. In a completely relaxed patient sweating and tremors disappear, tension dissipates, and even deep reflexes may become sluggish or occasionally vanish completely.

When I talk about this, I am reminded that some years ago we were interested in basal metabolic rates for experimental purposes, and we found that if we took seven basal metabolic rates on an individual on successive days, they each fell lower and lower. We finally said that for the purpose of this experiment we had to put the patient through at least seven tests before getting the patient anywhere near the so-called basal state. The cause of the tenseness was simply the examination situation itself.

In addition to the examination situation, there

is the patient's life situation. Anxiety characteristically arises in certain kinds of life situations. Competition, facing new or difficult situations, proposing marriage, marital discord, illness of a child, death of a relative, threatened loss of a job or status, strained relationships with fellow employees or with an employer—one may, in fact, list everything from the daily and relatively petty irritations, annoyances and embarrassments to the desperate events which "try men's souls."

PERSONALITY DIFFERENCES ARE IMPORTANT

People vary in their ability to cope with stress. Some learn to avoid crises because they are too painful. Once anxious, twice shy. Some continue to experience fear and dread for days and weeks of sleepless nights. Others, after heroic attempts at self-control may gradually acquire mastery of their apprehensions. Still others face life's vicissitudes blandly and present pictures of imperturbable composure. So we need to know what kind of person we are dealing with, from a diagnostic standpoint—what kind of person we are examining and treating—and something about his life situation.

The kind of person is revealed by his behavior during the examination, and by a knowledge of his characteristic ways of behaving in the past. So we need to observe him closely throughout the examination. What is there in his general behavior and attitude that would suggest anxiety? There may be restlessness, worrisomeness, distractibility, garrulousness, suspiciousness, shyness, cheerfulness, etc. And what can we learn from his past? Can we pose questions during our examination that will evoke a more complete picture of his life situation? We should seek to learn the composition of his family, where they live and work, something of the emotional setting of the family. How do these people get along together? Where does the patient stand in relation to the others? Who is the family pet? The family scapegoat? Who makes the decisions? What are the family's ideals—work, prestige, politics? How does this family, and in particular this patient, respond to misfortune, death, illness, business failure? What does the educational, occupational, social, sexual, marital history reveal about this patient? Is he energetic, indolent, thoughtful, impetuous? All of these are sources of information on how he has reacted to stress in the past.

Now we come to the more important conclusions. Is the patient now in a situation which might reasonably be expected to evoke an anxiety state in him? If so, then the first point in the positive diagnosis has been made. It does not prove it, but it constitutes presumptive evidence. Point two: has this person, in the past, reacted with anxiety to stressful situations in a marked degree? If so, a second point has been established in favor of a positive diagnosis. Point three: does the patient's behavior in the examination situation itself show

much anxiety? On the other hand, does reassurance allay this so that his pulse rate falls, or does he tremble less? If so, this is point three in favor of such a diagnosis.

Now we have arrived at a situation which may become quite complicated, and where judgment may become very difficult, for if the patient has had tension-producing situations and if, for example, there is some evidence of hyperthyroidism, then a definite decision cannot be made. If there is no evidence of hyperthyroidism, and if there is one of the other conditions that I mentioned which may have anxiety components, then we have good evidence for an anxiety state. If there is no evidence of hyperthyroidism and no anxiety-producing state, and if the patient has exhibited anxiety in the past, one tends to favor the diagnosis of anxiety.

In short, if I were to go through all of the combinations of factors here, you could see that when you are dealing with a great many unknowns and conflicting pieces of evidence, possibly of dubious validity, you would end by being forced to temporize. Possibly you would employ some anxiety-reducing drug, and perhaps even a placebo pill.

At a second appointment, we try to learn more about the patient by means of sympathetic, tactful questions, and to elicit from him a story that will help clarify the diagnosis. In many cases our initial impression is provisional. It is only by seeing the patient on several occasions and by inquiring into his past—getting a picture of how he behaved—that we can confirm or reject our diagnosis of an anxiety state.

The purest type of anxiety case is that in which there is no complicating environmental situation, where there is no stress, where the anxiety occurs in attacks that seem on the surface to be unrelated to any event in the patient's life. This is the true anxiety neurosis.

Now, I'd like to introduce Dr. Jenkins, our chief of child psychiatry, who will talk about anxiety reactions in children.

ANXIETY IN CHILDREN

Dr. R. L. Jenkins: Children are more prone to anxiety than adults, and for obvious reasons. The less competent one is, the more dependent he feels. No child would survive but for the care of his parents, and everything that threatens the cessation of that care—their anger, their displeasure, their devotion to somebody else—is a potential threat, and he is likely to react accordingly.

A very common cause of anxiety which many families are aware of is the fear of displacement as the only child or as the youngest child on the arrival of another child in the family. A great many parents are aware of this, and yet many of them don't recognize how distressing such an event can be to the child. In trying to get mothers to appreciate this, I have asked them to consider how

a woman might feel about it if her husband disappeared for several days and then came back home with a strange woman, and moved his wife out of the bedroom to make room for his new partner. Something very comparable often happens to the older child's sleeping place on the arrival of a new baby. Continuing with the parallel, I suggest that the husband's time would be taken up, day and night, by the new arrival, and he might try to convince his wife that she should be grateful to have the new woman in her home. You know what his wife would do: she'd go home to mother! But that alternative isn't available to the displaced child; he is home with mother already!

The desperation that the child may feel is something that parents need to be made aware of. This is an occurrence for which there should be preparation, to make sure he doesn't feel neglected. In particular, this is the time when the father may helpfully make up for attention that the mother is unable to give, and when the parents should make a special effort to take the older child in as a part of the group, giving him some recognition, some sense of status, in relation to the new baby.

The anxiety problems which we see most often in school-age children are most pronounced in middle-class homes, in educated homes and in homes of people who are educationally ambitious. Parental care is essential for a child, and the child's best assurance that he is going to get it is that the parents approve of him, praise him, show him regard and affection, and are proud of him. This approval and affection becomes dependent, in such homes, upon success, particularly in school. Children are and have to be held up to a certain standard of expectation, and this is manifested commonly by criticism or something less than praise. There is a necessary balance, however, between the amount of criticism a child can tolerate and the amount of praise he gets. This is a fact that many parents recognize. They know that they are being too critical, but they can't stop. They have a fast reaction time, and when the child has done something that he shouldn't, the reprimand is out before they have thought about it.

Parents can learn to do something else, in this regard, and can do it much more readily than they can check their criticism. It is to make a point of finding things for which they can praise the child, and to express affection and to go out of their way to give warmth, regardless of his past behavior. These are ways they can support the child so that he can tolerate the amount of criticism they are giving him. This is a technically useful device in counseling parents.

In school-age children, of course, we frequently see causes of anxiety that are out of the home. We have run into a certain number of cases which we call "school phobia," but usually cases that

seem to belong in this classification are really separation anxiety. What the child fears is separation from his parents. Of course, in the problem of the anxious parent or of the neurotic mother, anxiety is always contributive. If the mother is always worried about the health of the child and of other members of the family, this is not a reassuring element.

But when we run into problems of anxiety in relation to school, of course, there are sometimes other causes. Sometimes the child is afraid of the teacher, or afraid of the teacher's criticism, or afraid of failure—the teacher's disapproval. Once in a while, the child is afraid of the other children. Sometimes that is a physical fear, but more often it is a fear of teasing or of not being accepted by them. Very commonly, however, the child is afraid of not doing well enough in school to satisfy his parents' expectations.

In most cases when we run into anxiety in a child, it is a reaction to a specific situation, and is a temporary and, hopefully, a passing thing. We try to do something about it so that it won't become chronic or frequently recurrent, with the possible development of a psychoneurotic illness or a psychosomatic disorder. We try to find what the cause of the anxiety is, and to remove that cause or ameliorate it. Here reassurance is tremendously important. A great many fears about health, for example, can be removed by reassurance on the part of the physician. Some of these causes we can't remove, but sometimes one can give the child a type of psychological tool, some way of meeting the problem which is troubling him, and with a little parental or professional support, he usually can cope with this kind of situation with some degree of assurance.

We shouldn't forget how frightening illness is—often even to adults. It is more frightening to a child. When I was an intern in pediatrics, the attitude of the nursing staff certainly was that parental visits were bad for children. I think we have moved past that point. When the parents visited, the child wanted his parents to take him home, and there was trouble for the nurses when the parents left and the child remained. But the devastating, longer-term effect is on the child whose parents haven't visited him and who feels he has been deserted. This is much more serious in its consequences than the temporary upset of the visited child at the time of his parents' departure. I am glad that our hospitals have moved in the direction of increased contact between parents and hospitalized children. I think this is healthy and needs to be kept up.

The preparation for a thing like a tonsillectomy is important. I believe the practice of letting the parent remain with the child until the anesthetic is administered is a good one.

Most of our work with children in these regards relates to the removal of causes for anxiety. I

think there is a place for the use of drugs, but it is small. It is a crutch to be used temporarily in helping the patient to meet a situation, but then we trust he will be able to get along without it. However, Dr. Ward, an assistant professor in our Department who works in the outpatient service, is going to discuss the treatment of anxiety further, and I'd like to introduce him.

FINDING AND REMOVING THE CAUSE OF ANXIETY

Dr. J. S. Ward: I propose to talk about anxiety in adults, primarily. We have often heard that this is an age of anxiety, and I think that this is true. As communication increases, we are faced with more frightening types of problems, and there are certain things that I think we should be anxious about. For instance, we don't want to decrease our apprehensions about Cuba or Khrushchev or medical care for the aged. I don't think it would do one any good if we were to make him indifferent to these problems. We want to treat the anxieties of people who are incapacitated, but there is a certain amount of anxiety that is needed for progress, and we certainly shouldn't touch it.

When we undertake the treatment of anxiety, we should consider many things. We have to consider the diagnosis. Certainly we are going to treat nerves secondary to thyrotoxicosis a little differently from the way in which we treat nerves secondary to an anxiety state. We have to consider the form that the anxiety takes. Is this a free-floating type of anxiety that the patient has a difficult time describing to us? Is it agitation, restlessness and uneasiness that may not be anxiety at all, in terms of a primary disease, but may be secondary to depression? Is it the anxiety that takes an organic expression, or to use technical nomenclature, a psychophysiologic reaction? Or is it fatigue? In that case we may not see it as anxiety but as the exhaustion that anxiety has produced.

I think we have to consider the patient's physical and personal resources. What is his age? What can he tolerate? What should he not have? What has been his experience with various sorts of treatment? Is he a placebo reactor? Does he have any particular prejudice toward a pill? Does he react favorably to reassurance?

I think it might be easy to consider treatment as focused in two areas: factors outside the patient and factors within the patient. There is something that is making the patient anxious. If it is 24 days of sub-zero weather in January, we can't do much about the cause. However, if the cause is something that we can alter, perhaps we should think about attacking the thing outside of the patient, as well as treating the patient himself. If the man who walks into our office is terribly nervous because he is in a financial bind and his family doesn't have enough food and he consequently regards himself as a failure, we had bet-

ter treat his anxiety by referring him to a social service agency that can unravel his knotty problems, and perhaps get him a job and the security that he wants. We might waste an awful lot of effort before achieving the same results by ourselves.

Or take the example of the person who is an involuntal reactor. We all know the severe hypochondriasis in such a patient. We know his maddening degree of self-depreciation. We know his unacceptable degree of suspiciousness. Now we can call the patient's wife to the office and tell her, "Your husband is having an illness. This illness has a natural course to it. He isn't entirely responsible for his behavior. He really doesn't mean all the things that he is saying, and therefore, if you treat this as symptomatic of an illness, rather than taking it too personally, you'll probably do him a lot more good than if you increase his guilt by reacting as if he actually meant what he says."

As for the patient whom we must treat, I like to divide treatment into two general areas. We have psychotherapy, and we have drugs. I think that the spoken word of the physician can never be overestimated. All of us know of instances in which unwitting remarks such as "You'd better watch out or you may drop dead from a coronary someday" have made a patient afraid even to raise a pen. The physician can have a comparable effect in a positive way. Patients don't usually forget doctors' appointments. Rather, they look forward to them for days and weeks, waiting to see what the doctor is going to say. When they finally reach the doctor's office, one word of reassurance from him can achieve a great deal. Sometimes the patient tries to attract the physician's attention to social difficulties but feels that he must complain of something that is properly the doctor's concern. Such a patient may say that his stomach aches or his head hurts, despite the fact that the motive for his visit is that he feels guilty as a result of his mixed feelings concerning his alcoholic wife. I think a little reeducative therapy in such a case can do a great deal of good. We can explain to such a person that mixed, ambivalent feelings are "par for the course," and that an individual who experiences them is not therefore a bad person.

We are, I think, in a parent-child relationship with each of our patients, and when we can assure the patient that he or she is acceptable to us, we contribute significantly to the solution of the problem. Dr. Jenkins told you that approval, or at least acceptance, by the parent is essential to a child's well being, and I think the same principle applies in the doctor-patient relationship. Incidentally, I think we save ourselves time by such a technic. Many doctors say they haven't time to sit down and hash over their patients' personal problems with them. But sometimes if we *don't* let them ventilate in this fashion, their pentup energies will be dispelled in very peculiar ways.

The patient will come back time and time again with all sorts of complaints. He consciously believes them, but really is looking for a chance to say some things that would have taken the physician no more than 10 minutes to hear on the occasion of his first visit.

DRUG THERAPY

The other way in which we can help the patient is by drugs, and I should like to give you the benefit of some of our experience with that type of therapy in the Outpatient Department—to tell you of some of the drugs that we like, and what we do with complications. I think that in acute situational anxiety in a patient who is of such character that he doesn't depend upon outside sources of help chronically, a half a grain of phenobarbital three times a day is the treatment of choice. As Dr. Jenkins pointed out, it is important that Dr. Jones should give him the drug, and that the patient feels that every time he reaches for that pill, Dr. Jones is with him. I think the importance of this factor has been proved by placebo studies where various doctors have had different responses to placebos, correlated with the patients' confidence in the doctor.

Next let's take the patient who seems to have a chronic sort of anxiety, who may have some character weaknesses and whom you might not want to put on something that is addicting. For him I think you should think about the phenothiazines. Thorazine is really the penicillin of anxiety. It is still the best drug to use in a great many agitated conditions. It is an anti-anxiety medication; it is an anti-emetic; it has some analgesic properties; it is a soporific; and though it has some side-effects, they are usually reversible ones. Twenty-five milligrams of Thorazine four times a day is quite effective in a patient who has moderate agitation. The liver complications are reversible, and the Parkinsonian ones are reversible or treatable.

With some of the phenothiazines, a rule of thumb that you probably know of is that as the potency increases (for instance Stelazine is 25 times more powerful than Thorazine, milligram for milligram), the extra-pyramidal tract side-effects are increasingly prominent. Now as the potency decreases—i.e., when Thorazine is compared with Stelazine—the sedation effects come in. So if you want a drug with which you can calm a person by administering just a milligram or two twice a day, then in all probability you have to think first of the Parkinsonian complications. I think that with that dosage you are not going to have those complications, however.

There are other drugs of the anti-anxiety group that are not phenothiazines. We still use a lot of Miltown and Equanil, the meprobamates. This is a safe drug, it can be used in high dosages, and it has few side effects. It might be the drug of choice, incidentally, where the patient has a great deal of muscle tension, for it is a fine muscle-re-

laxant. When I was in military service in a training center, where people used to have some muscle problems caused by marching 27 miles per day, we used to put patients on eight tablets of Equanil a day—i.e., 3,200 mg.—and still we didn't get too many side effects. Patients can become intoxicated on meprobamate, but the intoxication problems can be treated usually in the same way that you treat barbiturate intoxication.

We haven't used Librium to any extent.

Now what about the patient who is agitated and restless, who may not be suffering from anxiety at all, as his primary condition? He may be a depressed patient, and therefore the treatment perhaps should be an anti-depressant medication. We have the monoamine oxidase inhibitors that you are all familiar with, I am sure—Nardil, Niamid and Marplan. We don't use many of those, for they should be followed in a laboratory setting. But we do use some that are not monoamine oxidase inhibitors, and the ones that we use mostly are Tofranil, and Elavil. Tofranil seems to be a good drug for the patient who has little agitation, and Elavil has a soporific quality, so we use it for patients who have a great deal of agitation. They come in 25 mg. tablets, and we use three to six tablets a day, usually for periods of four to six weeks, and then we maintain the patient on one to three tablets per day after that.

For Parkinsonian symptoms, I think the best drug to use is Artane. It is the cheapest and it is just as effective as any of the newer, more esoteric compounds that have been marketed. One milligram per day or b.i.d. seems to work pretty well.

Now there are some conditions that perhaps should be referred to a psychiatrist. The patient who has been given reassurance repeatedly but still doesn't respond is probably suffering from some conflicts that should be explored by someone who has specialized in this area. The obsessive compulsive probably should be referred to a psychiatrist. What about the anxiety that is secondary to an impending psychosis? Incidentally, the most severe anxiety that you are likely to see is in a patient of this sort—the person who feels himself slipping. He is having a horribly frightening experience, and he will present with more panic, I think, than does a neurotic. He should be referred to a psychiatrist, especially if he has a depressive psychosis in which suicide is a very good possibility. If there is any doubt that the anxiety may be symptomatic of a psychotic condition, the patient should be referred.

We have left a little time for questions, so I am going to have Dr. Pepernik resume his role as master of ceremonies.

DRUG COMBINATIONS

Dr. Pepernik: The first question from the audience relates to the efficiency of combinations of drugs such as Deprol.

Dr. Ward: In a sense, a lot of these drugs are combination drugs, like Elavil. Elavil has anti-depressive and tranquilizing qualities. As an anti-depressive I should prefer Elavil to Deprol. A lot of Dexamyl has been used, which is the old standard by among combinations. I don't really think combinations are a good idea, for I think that in many instances physiologic systems are competing with these drugs, so I would prefer to treat what I consider the primary problem in the patient. If it is depression, I would use exclusively an anti-depressive drug, and if it is anxiety, I would use an anti-anxiety drug. We don't use very many of the combination drugs in the Outpatient Department. We use just the drugs that are designed specifically for anxiety or for depression.

Dr. Pepernik: I think there is another comment that all of us should be aware of, with all of the publicity about the new drug regulations that are coming out of Washington. Certainly the tendency has been to frown upon drug combinations and I know of a certain number of preparations that are already off the market because they are drug combinations. Also a number of such drugs that firms have attempted to put on the market are destined never to get there.

The next question from the audience has to do with the usefulness of Librium.

Dr. Ward: As we all know from the information we have been getting, Librium is designed for a wide range of activities. Librium doesn't seem to have as good an anti-anxiety effect as the other drugs that I have mentioned. Incidentally, Librium is being used a great deal for acutely agitated states. Maybe it can be used in the alcoholic who comes in badly disturbed. I am sure that just a year ago many of us might have considered giving 100 mg. of Librium, intramuscularly—a really whopping dose. This is what we give the severely agitated inebriate today. This is about the only type of patient on whom we have used it recently. We instead have stuck pretty much to the phenothiazines. Stelazine, I think, is a really good one.

HABITUATING DRUGS

Question: Which of these drugs are habituating?

Dr. Pepernik: At any given time, we usually have one or two patients in the hospital being withdrawn from either a meprobamate, a bromide or a barbiturate. In our experience, those are the common addicting or habituating drugs, certainly on the female service.

Dr. Ward: By definition, of course, an addicting drug is one that patients are impelled to continue taking, is also one that patients tend to take in increasing quantities, and thirdly is one from which patients experience disagreeable physiologic symptoms on withdrawal. The withdrawal symptoms in meprobamate cases are certainly less than those in cases of people who have been taking cortical depressants such as the barbitu-

rates. The intoxication syndromes are quite frequent. The dependent person is going to get anxious when you take away his meprobamate, but as a rule he won't have the degree of physical withdrawal symptoms that he would have in giving up barbiturates. I have seen convulsions in people who had been withdrawn from Doriden, and I am sure there have been convulsions in some on being withdrawn from heroic dosages of meprobamates.

Dr. Pepernik: I'd like to quibble with Dr. Ward on this point. We have seen a number of patients who have been on 400 mg. of meprobamate four times a day for a year's time or more. I think this time factor is important. When such patients have been withdrawn abruptly, we have seen the classic syndrome that we associate with withdrawal from any other addictive drug. They have had the EEG findings of very rapid rates in the frontal area. They have had the usual nausea, trembling and sweating. They have had convulsions during the first couple of days. Psychoses have developed within four, five, or six days, and have lasted for several weeks.

Question: Is a sleep disturbance more common in depression or in anxiety?

Dr. Huston: I assume that you are asking that question from a diagnostic viewpoint. In the characteristic late disturbance of a depressed patient, the most pathognomonic sign is early-morning awakening, which as you know tends to occur at around two, three or four o'clock. The patient can't get back to sleep, and it is at that time that he takes drugs in an effort to get back to sleep, and feels most depressed. It is then that suicide is most often attempted.

It is also true that some depressed patients have difficulty in going to sleep. The anxiety patient, however, is more likely to have difficulty in going to sleep, and he may wake up, but if he wakes up it is frequently in response to a dream. He may have had a nightmare, and he may wake up trembling and sweating, but he doesn't have depression. So the sleep sign is of considerable help. If it is solely early-morning awakening, the diagnosis is almost certainly depression. If it is difficulty in going to sleep, it may be either one, and if it is broken sleep, it is more apt to be anxiety.

SHOULD DRUGS BE USED IN TREATING CHILDREN?

Question: What about the use of drugs with nervous children?

Dr. Jenkins: Personally, I rarely use drugs in treating the nervous child. The most widespread use of drugs in child psychiatry at the present time is in the use of cerebral stimulants in treating brain-damaged children. You get a paradoxical effect. You give Dexedrine or Ritalin to the over-active, distractable child, and he quiets down. Now this is a highly valuable use for drugs in child psychiatry. I certainly think it proper to use

anxiety-reducing drugs in children, and though I don't use them often, my favorite is meprobamate. I am more hesitant about barbiturates because in numerous cases there is a little cerebral damage, and in such instances patients are likely to respond badly to a barbiturate.

Question: How do you manage children with disturbed parents?

Dr. Jenkins: In our situation, the patients frequently live at a considerable distance, and despite our space limitations we are likely to bring such a child into the hospital. But in that kind of situation your main dependence has to be on changing the mother's management of the child, the mother's way of reacting to the child, and sometimes you can't do this in the home. Usually the child is making the mother anxious, and the mother is making the child anxious, and only if you break that vicious circle will you begin to get somewhere. I wouldn't hesitate to make use of a medication in such a case. Indeed, I am sure I would use it, unless the child were hospitalized.

Question: When is separation indicated?

Dr. Jenkins: You are treating the child through the mother, and sometimes the mother has to be taken out of the picture. It depends upon how wide or deeply involved her problems are. If she is just worried about the child, you can usually use her as a means of affecting the child.

ENURESIS

Dr. Pepernik: Will you comment on enuresis, Dr. Jenkins?

Dr. Jenkins: I think that the first question about nocturnal enuresis—which is the usual variety—should be, "Was the child ever dry?" I think this is a very important, determining question. I'll pass over those few cases where there is organic involvement, for I don't want to get into them here. If the child has never been dry, then he has never been effectively trained. Typically, the background is one of irregular sleep habits, of parents who have never taken the responsibility of getting the child up, regularly, and very commonly a child who doesn't feel very well accepted, and a child who is hostile because nobody takes care of him in a way that persuades him that somebody really cares about him. You have a problem of domestication—a child who hasn't yet been housebroken. This is a matter of training that should have been instituted at an early age.

Now if the child has been dry for a period, then enuresis at night is usually occasioned by anxiety in response to an additional stress. Here your method of treatment should focus upon this cause, with encouragement. When the child gets to the point of wanting to stay dry, and in a situation where there isn't a lot disturbing him, the problem ordinarily disappears or is managed. He learns how to care for himself.

The matter of motivation is terribly important in

the first group, and anxiety is usually the element to be corrected in the second group.

DIAGNOSIS OF BRAIN DAMAGE

Question: How do you differentiate brain damage in children?

Dr. Jenkins: I think we are coming to recognize that mild brain damage is far commoner than was recognized a professional generation ago. We see reflections of this in many areas. The history often gives you a clue. You often get definite but minimal neurologic signs, although you get a "normal" neurologic examination. But after all, when an individual can have a prefrontal lobotomy and about 20 to 25 per cent of the long fibers of the brain are cut, and yet give a "normal" neurologic examination after he has had a chance to recover, this is not too surprising.

The findings which psychologists in our clinic give us regarding capacity for space perception, for reproduction from memory of geometrical designs, are helpful. And some of the projective tests give indications in this regard. Piotrowski developed a method of scoring a Rorschach that is valuable in this connection. The general picture of hyperactivity, short attention span and distractibility is characteristic. These children have been described as stimulus-bound.

And the electroencephalogram is a very useful method, I believe, for differentiating these two, but I think we must recognize that we get a good many false positives on the electroencephalogram in people who are normal, in so far as we can tell, but who have somewhat abnormal tracings. On the other hand, we get a great many false negatives on the neurologic examination. In some children who have had some brain damage, we can't find a thing on neurologic examination. So bearing in mind that you may run into a false positive, I think the electroencephalogram is quite useful.

Question: Can children tell you what bothers them?

Dr. Jenkins: I think that if you can develop a relationship with a child that permits him to talk to you freely, he'll usually tell you what is bothering him. The younger the child, the more difficult is communication by verbal means, and that's the reason why we have a play room with toys in it. In such a place, a youngster often will reveal what he is worried about by what he does. But for the most part, in children age five and older, the development of an easy relationship—a situation where the patient feels comfortable with you—will encourage him to tell you what worries him, very often without any previous preparation, if you just ask him.

I usually don't have the parents present. Of course, an anxious child may be more anxious when separated from his parents. One tries to avoid pressuring him into anything, and tries instead to get him to move into it willingly. If the parent is there, the parent can probably tell you

what the child has told him or her. But if the child hasn't been able to tell the parent, he isn't likely to tell you with the parent present. He might, but chances are that he won't.

Question: What about the use of barbiturates in disturbed children?

Dr. Jenkins: I feel that phenobarbital is contraindicated, that it tends to make them worse if they have brain damage. Where there is overactivity as a result of the reduction in higher controls, as I believe is commonly true in the brain-damaged child, then the drug still further reduces those higher controls. But if the picture is more strictly one of anxiety, without any underlying brain damage, I think you can find it useful.

DURATION OF DEPRESSION

Dr. Pepernik: Let's come back to the questions "How long does a depression last?" "How long does an anxiety state last?" and "How long should we treat them?" I'd like Dr. Huston to answer them for us.

Dr. Huston: Some years ago, just after the introduction of electrotherapy, we were interested in comparing the results of this treatment with untreated cases, and we had an opportunity to study nearly 150 depression patients who had never received any electrotherapy. Generally speaking, those suffering from what we call involuntal depression had depressions which lasted a very long time. In this condition the depression is very serious, for when untreated, nearly a quarter of the patients committed suicide. But those who did not commit suicide or die from some other cause had depressions that lasted, on the average, from two to four years, and there were some cases that went on for 8, 9, 10, 12 or 15 years. So these are likely to be long-drawn-out and very distressing affairs.

On the other hand, if the depression occurs in a younger person—younger than 45, generally speaking—the depression doesn't last so long. On the average these depressions tend to last 8, 9, 10 or maybe 12 months. The younger the patient, the shorter the duration. For people in the 20's, the average is from two to four months, though in them the depression also may last a considerable length of time.

Anxiety states are much less predictable. There are many transient kinds of anxiety states that may last only a few hours or a day or two. These are in relationship to some fairly acute kinds of uncertainty. There are those that recur—that come in attacks of fairly short duration. And then there are individuals who have a kind of chronic anxiety that goes on for days or weeks, in the presence of a certain kind of situation. It may subside or continue as a low-level state of anxiety. A patient, for example, may become convinced that he is going to die from a heart attack, and he has this fear so strongly impressed upon him that he goes about in a constant state of turmoil, day and

night. It seems that no amount of examination or reassurance will relieve his mind. This is a chronic, lasting type of anxiety.

ELECTROTHERAPY

Question: Does electrotherapy cause brain damage?

Dr. Huston: No, we tried to look very carefully into that, too, in the late 1940's. At that time electrotherapy was a new treatment, and we were quite concerned about it. It was very effective. It was a way of terminating depressions. There were a number of studies, and we did one here ourselves. Sixty-odd patients who had been treated were brought back at varying intervals for re-study, and we could find no evidence that any permanent damage had been incurred. It is true that there is a memory loss immediately following treatment, but it is usually minor and clears up in three weeks. It is a memory loss regarding recent events, primarily. Of course, more marked memory losses can be produced if treatments are given in rapid succession, such as every day or twice a day. But that isn't the way they should be given for depression. Thus we feel, generally, that there is no permanent brain damage.

Question: Is electrotherapy preferable to drugs?

Dr. Huston: If the patient is suicidal and can't be protected, and if he is in deep depression, electrotherapy may be the treatment of choice. Usually we begin treatment with drugs much more often now than formerly. Quite often a patient who is quite depressed will respond very nicely to a drug. If this doesn't work, then we have electrotherapy to fall back on. As a generalization, I think one can say that since the introduction of the anti-depressant drugs, electrotherapy is not used so much. On the other hand, in some cases there is no point in temporizing. It is better to go ahead and give the treatment, which requires two or three weeks. Electrotherapy is effective in about 85 per cent of cases.

RAUWOLFIA

Question: Does Rauwolfia cause depression?

Dr. Huston: Well, I have my fingers crossed; I don't know. Rauwolfia is in disrepute just now because of this fear. I have seen several patients on Rauwolfia who were depressed, and who were taken off the drug with lifting of the depression. But I have seen others who remained depressed.

Now this is the reason why I'm not convinced. Rauwolfia used to be given for mild anxiety, and may still occasionally be used for that purpose. A depression sometimes begins with anxiety, and the patient may go on for two or three weeks or a month or two in an anxious state. Then depression becomes more obvious. Now if the patient were put on Rauwolfia during the period of anxiety, the Rauwolfia would get blamed for the depression. I have seen cases in which Rauwolfia possibly may have been the culprit, but I have never felt that its guilt was very firmly established.

Question: I have a lady who is anxious and mildly depressed. Meprobamate doesn't seem to help her. What should I do?

Dr. Huston: Well, I'd put her on an anti-depressant drug. If she is anxious, meprobamate certainly is a drug that might be used, but I would be more inclined to use Tofranil in that kind of case.

Question: I have a patient who has had postpartum depression twice. She is pregnant again. Should I use drugs?

Dr. Huston: I'd certainly consider drugs at the time of delivery. And if I thought the depression was going to be very long or dangerous, I think I'd refer her for possible electrotherapy or at least manipulation of the drug dose to get the best effect. In a case of depression, you, of course, must take all of the dangers into account. This type of patient merits careful psychiatric study.

Question: I have an epileptic patient who gets depressed. Can I use amphetamines or Dexamy?l?

Dr. Huston: I think it is an extraordinarily difficult situation to handle when you have to administer a drug with an anti-convulsive effect to a patient who is discouraged and depressed. The task, I think, comes down to a matter of trying to balance drug dosages, and if there is true depression, trying to use an anti-depressant drug different from Dexamy?l, for example, which is definitely a stimulant.

Dr. Ward: have you had any cases of this sort recently?

Dr. Ward: Perhaps an easy way out would be to refer the patient for psychotherapy. Seriously, however, I don't think there is any good answer to the question. One must first consider the physical resources of the patient. Any time that a cortical depressant is going to compromise the sensorium because of a pre-existing lesion, I think the drug is contraindicated, unless it is a necessary anticonvulsant. So when our choice is between an antidepressant and an antianxiety pill, I think we are markedly limited. This may be so complicated a situation that hospitalization is advisable.

PARNATE

Question: Do you use much Parnate?

Dr. Ward: We haven't used much Parnate in spite of our good relations with the SKF people. I think that to determine whether you are dealing with a depression, it might be a good idea to ask for a consultation. You certainly have to review all symptoms—the physiologic ones and the mood. The patient may describe to you a picture that is more in the area of depression, and if so, I think you are safe in using the antidepressant with which you are most familiar. Sometimes it is a very knotty problem: Is it a depression, and am I going to be adding to the patient's agitation? If you have a lot of agitation, I'd use an antidepressant that has multiple anti-agitation properties, such as Elavil.

Dr. Pepernik: On the inpatient service, we have used Parnate to a moderate extent. Generally speaking, we have tended to start most of our outpatients on drugs of the Elavil, Tofranil group, with one thing in mind. We think that these drugs are just about as effective as the monoamine oxidase inhibitors. The advantages of using Elavil or Tofranil initially is that after giving the patient a trial on the drug, for three or four weeks' time, unless he has returned to a normal state or is showing definite improvement, one can shift over very rapidly to one of the monoamine oxidase inhibitors such as Parnate. If you start out in the reverse order—e.g. with Parnate first—and if the patient doesn't respond, you have to wait approximately two weeks before starting a drug such as Elavil or Tofranil. Without this waiting period, serious side effects may occur and several deaths have been reported when these two drugs were used simultaneously or in rapid succession.

Our general feeling, I know, has certainly been that if a patient tends to fail on one drug, he will fail on the second drug and on the third. Thus it's hardly worth playing around with more than one. Drs. Clancy and Norris, of our Department, have a very interesting study demonstrating this fact. Something like 22 out of 24 patients continued to fail repeatedly on other drugs, once they had failed on the first one. Those same patients, when they were hospitalized and treated with electrotherapy, got over their depressions very promptly—i.e., 23 out of 24 of them did.

TREATMENT FOR THE ELDERLY DEPRESSED PATIENT

Question: How would you treat the aged apathetic or depressed patient?

Dr. Pepernik: If I had the chance, I'd just as soon give electrotherapy to such a patient, for I feel it is far safer than the antidepressant drugs, particularly in the aged. If we use drugs, there are smaller dosage forms available for use in the aged. We start out such patients on 10 mg. of Elavil or Tofranil. At this point, we insist that the patients remain a little bit more in bed, for they tend to exhibit hypotensive phenomena. If they tolerate the 10 mg. dose, we gradually increase it, in a few days, to the usual therapeutic dosage. But we do get a lot of side effects.

Question: Does electrotherapy prevent depression?

Dr. Huston: Electrotherapy is no guarantee against a recurrence of depression, and the only statistics we have are general ones which never apply to the individual. The general rule is that about half of the people who experience full-blown depressions have only one in their lives. About 30 per cent have two; about 15 per cent have three; and the remaining five per cent have more than three. Electrotherapy does not alter this general picture.

Autosomal and Sex Chromosomal Aneuploidy: An Exhibit

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INTRODUCTION

MENDEL'S DISCOVERY of the basic laws of inheritance, in 1867, is regarded as one of the great scientific achievements of the human mind. It becomes even more outstanding for those who realize that Mendel had no knowledge of chromosomes. Chromosomes were described for the first time in the 1870's, and were then of interest mainly to cytologists and less to geneticists. Sutton related these cytologic findings with genetics almost 40 years later, in 1903. He and Boveri almost simultaneously advanced the theory, now known as the Sutton-Boveri hypothesis, that the hereditary parts (nowadays called genes) are borne by the chromosomes. These two men can be considered among the founders of cytogenetics. Some of their conceptions impress us as modern and up-to-date, but another half century elapsed before human cytogenetics rose almost overnight to become an important branch of genetics.

Certain cytogenetic discoveries are of importance for the clinician as well as for the geneticist, and the clinician may feel an obligation to become acquainted with the recent developments in this field. It is the purpose of this paper to provide him this information by presenting the available knowledge in the form of an exhibit that can be assimilated by means of some rapid glances at a series of pictures. However, a few introductory remarks may facilitate an understanding of the subsequent drawings.

THE USUAL NUMBER AND CHARACTERISTICS OF CHROMOSOMES

It is now definitely established that the normal chromosomal complement for human beings consists of 46, made up of 22 autosomal pairs and two

sex chromosomes (XX for females and XY for males). The anatomical structure of a chromosome is shown schematically in Figure 1. The chromosome consists of a centromere (which is the leading part of the chromosome during cell division), a long and a short arm, and the satellites. These latter, however, are present only in chromosomes where the centromere is located close to one end of the chromosome—i.e., the so-called acrocentric chromosomes of Groups D and G (Figure 2).

The chromosomal complement of man has been subdivided into seven different groups, which are identified by the letters A to G in Figure 2 and Table 1. Within a group, the individual chromosome pairs (numbered 1 to 22 for the autosomes) cannot always be distinguished from one another. The chromosomes differ from each other in total length (1 to 10 micra), in the site of the centromere, and in the relative lengths of the short and the long arms.

STRUCTURAL ANOMALIES

In recent years, two different categories of chromosomal aberrations have been discovered, namely anomalies of chromosomal structure and anomalies of their number. The former group will not be included in this presentation, except for translocations, which will be discussed briefly.

A translocation consists of the fusion of two chromosomes, or of major parts of two chromosomes, to one structure (Figure 15, arrow). A translocation is occasionally found in normal individuals (Figure 16). Such an individual, then, has 45 chromosomes instead of the normal 46. As the arrows in Figure 16 show, one of the No. 21 chromosomes is missing; that is to say, it is attached to one of the No. 15 chromosomes. The individual whose karyotype is presented in Figure 16 is normal. Her chromosomal complement or genome is balanced. One speaks, therefore, of a balanced translocation. Figure 15 shows the karyotype of a mongoloid who does not have 47 chromosomes (the typical number for mongolism), but has

This exhibit from the Cytogenetic Laboratory of the Department of Pediatrics and the Medical Illustration Department of the State University of Iowa, was presented at the Third Middle Eastern Mediterranean Pediatric Conference, at Beirut, Lebanon, in May, 1963. The project was aided by Grant B-2543 from the United States Public Health Service, National Institutes of Health.

only 46. However, one of the 46 chromosomes again is the product of a fusion of two chromosomes (Figure 15, arrow). This individual therefore has two regular No. 21 chromosomes, and in addition has a supernumerary partial No. 21 chromosome attached to a No. 15 chromosome. This child in reality has the genic content of three No. 21 chromosomes, and in consequence is a mongoloid. One speaks, in such cases, of mongolism due to partial trisomy 21.

Some translocations occur as a familial trait and may be transmitted to offspring. Some of these people may inherit a balanced translocation, and others may inherit a partial trisomy or a normal chromosomal complement. If more than one child inherits a partial trisomy, a familial chromosomal aberration such as familial mongolism may result. The pedigree of a family with two mongoloid children due to a familial 15/21 translocation is presented in Figure 17. Familial translocation, however, is not the only cause of familial mongolism. Cases of familial mongolism have been observed with the usual trisomy 21.

NUMERICAL ABERRATIONS

The second group of chromosomal aberrations, and those which concern us mainly in this presentation, are the aneuploidies or numerical aberrations. Before the different aneuploidies and their pathogenesis are discussed, a few definitions should be given. One speaks of *euploidy* if a normal complement of 46 normal chromosomes is present. Of course, normal human ova and sperms are euploid also, although they have only 23 chromosomes. A euploid cell with 23 chromosomes is called a haploid cell. A euploid cell with 46 chromosomes is called a *diploid* cell. Haploidy and diploidy are special forms of euploidy. For the sake of completeness, it may be mentioned that cells with 69 chromosomes are called *triploid*, and cells with 92 chromosomes are called *tetraploid*. Triploidy and tetraploidy (*polyploidy*) are found occasionally in malignant growths (Figure 26).

If a chromosomal complement deviates from euploidy, one calls it *aneuploidy*. The two most frequent and hence most important aneuploidies are *monosomies* and *trisomies*. In a monosomic cell, one chromosome of a given chromosomal pair is missing. Monosomic cells, therefore, have only 45 chromosomes. So far, no cases of monosomy of an autosomal chromosome have been observed. Monosomies of autosomal chromosomes are presumably non-viable. The only monosomy known in human pathology is the monosomy of the X-chromosome, the so-called XO chromosomal complement which leads to Turner's syndrome or ovarian dysgenesis (Figures 20-22 and Table 5).

If, instead of the usual pair, a cell contains three chromosomes of one particular kind, one speaks of *trisomy*. The most frequent trisomy of an auto-

somal chromosome is trisomy of the No. 21 chromosome, which leads to mongolism. The rarer autosomal trisomies are trisomy of the 13-15 or D group (Figures 11 and 12 and Table 2), and trisomy of one of the chromosomes of the 16-18 or E group (Figures 13 and 14 and Table 3). Other autosomal trisomies haven't yet been observed. It is most probable that trisomies of larger chromosomes—for instance of one of the chromosomes of Groups A, B or C—lead to non-viable formations. This is understandable if one realizes what the chromosomes are. It is said that the genotype of the human species is determined by approximately 20,000 genes. These 20,000 genes are aligned on the 46 chromosomes. The larger the chromosome, the greater the number of genes it harbors, though the Y-chromosome constitutes an exception to this rule. Already the trisomy of the smallest chromosome (No. 21) leads to a tremendous imbalance that results in mongolism. The shorter life expectancy of mongoloids is well known. Trisomy of a D or an E chromosome leads to severe multiple malformations (Tables 2 and 3) that shorten life expectancy considerably. Most of the trisomy D and trisomy E cases die in infancy. An even greater genic imbalance—one that is incompatible with life or at least with postnatal life—can be expected from a trisomy of one of the larger chromosomes.

At this point, the pathogenetic mechanisms leading to aneuploidy must be discussed. Figure 8 is a schematic drawing of the two meiotic or reduction divisions by which diploid ovogonia and spermatogonia are reduced to haploid gametes (ova and sperms). In the early phases of meiosis I, homologous chromosomes align with each other and form the so-called synapsis. In the metaphase and anaphase of the first meiotic division, the two synapsed chromosomes separate again, and a whole chromosome migrates to a daughter cell (primary ovocyte or spermatocyte). By this division, then, the chromosomal number is reduced from a diploid to a haploid set. A normal second meiosis is illustrated on the right side of Figure 8.

Failures may occur during the meiotic process. The most common of these is non-disjunction. This is illustrated in Figures 9 and 10. For reasons which are not always fully understood, the segregation of the two homologous chromosomes does not take place, and both homologous chromosomes migrate to the same pregametic cell. The ultimate result is a gamete with either 22 or 24 chromosomes. The failure or inability of the two homologous chromosomes to separate from their states of synapsis is also called non-disjunction. Fertilization with a normal gamete of the opposite sex leads then to a zygote with 45 chromosomes (*monosomy*), or to a zygote with 47 chromosomes (*trisomy*). Non-disjunction of one of the D chromosomes leads to trisomy D₁ (Figures 11 and 12 and Table 2). Non-disjunction of one of the chromosomes of Group E leads to trisomy E or 16-18 (Fig-

ures 13 and 14 and Table 3). Non-disjunction of one of the small acrocentric chromosomes leads to trisomy 21 or mongolism (Table 4). There are reasons to believe that non-disjunction occurs with particular frequency during the first meiotic division of the ovogonia, which remains in prophase for a considerable length of time. Yet non-disjunction during meiosis II may occur as well (Figure 10).

The different phases of the usual division of somatic cells, the so-called mitosis, are illustrated in Figure 3. During *mitosis*, each chromosome splits into two halves called *chromatids*. Each chromatid migrates to a daughter cell, where it replicates to a full chromosome. Similarly, as shown for meiosis, it can happen that both chromatids migrate to the same daughter cell, that both replicate there, and hence that the resultant cell has 47 instead of 46 chromosomes. This cell then contains one chromosome in triplicate instead of the usual chromosomal pair. The other cell which is the end result of this particular erroneous mitosis will have only 45 chromosomes, and is therefore monosomic for one chromosome. If the monosomy concerns an autosomal chromosome, the cell is presumably non-viable. The result, therefore, is an individual who has two different types of cells—cells with the original 46 chromosomes, and a cell with 47 chromosomes. Both of these undergo further mitotic divisions, and the individual resulting will have two types or clones of cells—namely one clone of cells with 46 chromosomes, and one clone of cells with 47 chromosomes. This is called *mosaicism*. An example of an autosomal mosaicism involving a No. 21 chromosome is shown in Figure 6. The child was a typical mongoloid about three years of age, with all the usual findings for mongolism. The chromosomal analysis, however, revealed 46 chromosomes in some cells and 47 chromosomes in other cells (Figure 7).

If the non-disjunction during mitosis concerns a sex chromosome, the monosomic cell with only one sex chromosome will be viable if it is an X-chromosome. This cell will be able to undergo further divisions. The result is an individual with three cell clones: one cell clone with three; one cell clone with two; and one cell clone with one sex chromosome. This is called a *triple mosaicism*.

Another mechanism which may lead to X-chromosomal mosaicism is shown in Figure 5. It may be possible that one of the chromatids lags behind during anaphase and fails to migrate to the respective daughter cell. Such a lagging chromatid may never reach the nucleus of the daughter cell, and hence disappears. Such a cell may originate a new—monosomic—cell clone; hence, a 45/46 mosaicism results. This explains how an XO/XX mosaicism (Turner's syndrome or gonadal dysgenesis) can occur.

Various sex chromosomal aneuploidies have

been observed as a result of non-disjunction during the meiosis of the ovogonia or spermatogonia. The result of the normal meiosis of an ovogonium is an ovum with one X-chromosome; the result of the normal meiosis of a spermatogonium is a sperm with either a Y-chromosome or an X-chromosome. The former—after fusion with a normal ovum—leads to an XY zygote (male), and the latter to an XX zygote (female). The result of non-disjunction during ovogenesis is an ovum with no X-chromosome, or an ovum with two X-chromosomes. The different possible zygotes, after fertilization of either one of these ova by a normal sperm, are shown schematically in Figure 18. Three types of viable zygotes may occur, leading to three clinical conditions: XO (Turner's syndrome or ovarian dysgenesis), XXY (Klinefelter's syndrome), and triple-X females.

The result of non-disjunction during the first meiotic division of a spermatogonium is ultimately a sperm with no sex chromosome, or a sperm with an XY sex chromosomal complement. A sperm without a sex chromosome probably has poor viability. However, evidence has been presented that a sperm without a sex chromosome can fertilize an X-ovum and produce an XO zygote, i.e., a Turner's syndrome. The majority of cases of Turner's syndrome result from the fertilization of an ovum without an X-chromosome by a normal sperm (carrying an X-chromosome). The result when an XY sperm fertilizes an X ovum is, again, an XXY zygote (Klinefelter's syndrome). Hence, sex chromosomal non-disjunction during the first meiosis of a spermatogonium may be the cause of a Turner's or a Klinefelter's syndrome.

Non-disjunction during the second meiotic division leads to three different types of sperms (gametes), namely sperms without a sex chromosome; sperms with two X-chromosomes; or sperms with two Y-chromosomes. In rare instances, the former may lead to a Turner's syndrome. The latter two result in XXX and XYY zygotes, which correspond respectively to a triple-X female, and a male with an XYY sex-chromosomal complement who probably does not differ from a normal male.

It was mentioned earlier that autosomal trisomies involving the larger chromosomes of Groups A, B or C are non-viable. The X-chromosome belongs to the group of C chromosomes. A number of women with a trisomy X have been observed who not only are perfectly viable but have phenotypes that show no, or only minor deviations. Some are more or less mentally retarded, and others are of normal intelligence. Some are infertile, and others are able to bear normal children.

Sex chromosomal aberrations with four or even five X-chromosomes have been reported. Yet again, the phenotype of these sex-chromosomal aberrations does not show major differences from

the norm. The relatively normal phenotypic appearances of sex chromosomal aneuploidies differ strikingly from the severe malformations seen in the autosomal trisomies D and E. Zygotes with sex chromosomal aberrations appear to be less vulnerable and more resistant than zygotes with autosomal aneuploidies.

An explanation for this puzzling inconsistency has been proposed recently in the so-called Lyon hypothesis. Preceding a discussion of that theory, a few words need be said about the sex chromatin or Barr bodies. Sex chromatin bodies consist of heterochromatic chromatin condensations of ovaloid shape adjacent to the nuclear membrane. A sex chromatin or Barr body in a nucleus of an epithelial cell taken from the buccal mucosa is reproduced in Figure 27, and Figure 28 shows the equivalent to the Barr body in a segmented leukocyte in the form of the so-called "drumstick." It is well known that the sex of a normal individual can be recognized in every somatic cell system by the determination of the so-called *nuclear sex*. If the cells display a sex chromatin body, then the individual is a female with an XX sex chromosomal complement. The nuclei of cells in normal males with an XY sex chromosomal complement do not contain a sex chromatin or Barr body. These individuals are sex chromatin negative.

The examination for nuclear sex is routinely made from scrapings of the buccal mucosa by means of the so-called buccal smear. The examination of the buccal smears of sex chromosomal aneuploidies reveals that individuals with Klinefelter's syndrome are sex chromatin positive, in spite of their external male phenotype. In some rare cases of Klinefelter's syndrome, two and even

three sex chromatin bodies are found. Patients with Turner's syndrome, on the other hand, are found to lack a sex chromatin body in spite of their female phenotypic appearance.

There is a definite correlation between the number of X-chromosomes and the number of sex chromatin bodies. In other words, the number of X-chromosomes minus one equals the number of sex chromatin bodies. The examination of the buccal smear represents a simple method for determining the number of X-chromosomes in an individual. After the establishment of this correlation, the question arose, "What is the significance of the sex chromatin body?" It was then found that the sex chromatin bodies represent genetically inactive X-chromosomes.

The Lyon hypothesis states that only one sex chromosome in every cell is genetically active during interphase.* That is to say, just one transmits genetic information to the ribosome. All the other X-chromosomes that may be present in the cell are genetically inactive, and represent the heterochromatic chromatin bodies in the cell nuclei. Many observations have been made in support of this hypothesis, the enumeration of which is beyond the scope of this presentation. It suffices to say that the relatively small phenotypic alterations seen in sex chromosomal aneuploidies, as compared with the severe malformations found in autosomal aneuploidies, are probably the result of the genetic inactivity of all but one X-chromosome in every cell.**

* *Interphase*, or metabolic phase, is the phase between two mitoses. During this phase, genetic information is transmitted to the ribosomes by means of RNA, but no DNA replication takes place.
** Very recently genetic activity of parts of the heterochromatic X-chromosome has been assumed.

PATHOGENESIS OF ANEUPLOIDIES

TABLE I

CLASSIFICATION OF CHROMOSOMES

Group	No. of Autosomal Pairs	Sex Chromosomes	Characteristics of Chromosomes	Number of Chromosomes	
				Male	Female
A	1- 3	—	Large with median or slightly submedian centromere	6	6
B	4- 5	—	Large with sub-median centromere	4	4
C	6-12	X	Medium with sub-median and median centromere	15	16
D	13-15	—	Medium and acrocentric	6	6
E	16-18	—	Short with median (16) or sub-median centromere	6	6
F	19-20	—	Short with median centromere	4	4
G	21-22	Y	Very short acrocentric	5	4
				—	—
				46	46

CRITERIA FOR THE EVALUATION OF CHROMOSOMES

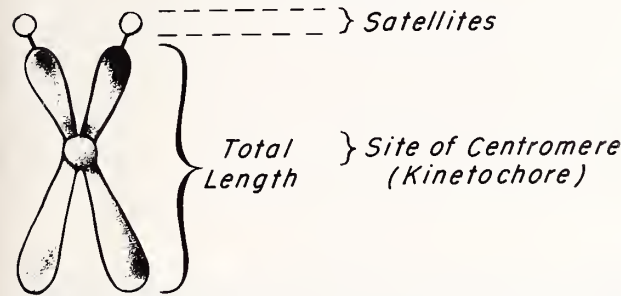


Figure 1. Structure of a chromosome.

The following morphologic criteria are used for the evaluation of chromosomes:

- 1. Total length of the chromosome (varying in metaphase between 1 to 1½ micra and 7 to 10 micra.
- 2. Site of the centromere (kinetochore)—terminal, sub-terminal (acrocentric, telocentric), median or sub-median position. The centromere divides the total length of the chromosome into arms which are of equal length if the centromere is metacentric. If the position of the centromere is sub-metacentric, a long and a short arm can be

distinguished. If the centromere is in terminal or sub-terminal position, the short arm is very short and usually carries a satellite. All acrocentric chromosomes have satellites, although only some of them are recognizable in the usual karyogram.



Figure 2. Idiogram and karyotype of a normal male.

NORMAL MITOSIS

In normal mitosis, the two chromatids of each chromosome segregate, and the centromere divides into two centromeres.

In the prophase, the DNA spiral duplicates and leads to the formation of two chromatids that are still held together by the centromere. In the late

metaphase, the centromere splits into halves. In the anaphase, each half-centromere carrying one chromatid migrates to the daughter cell.

Result: The daughter cells have the same number of chromosomes and the same genome as the cell from which they originated. In mitosis, diploidy (2N) is preserved.

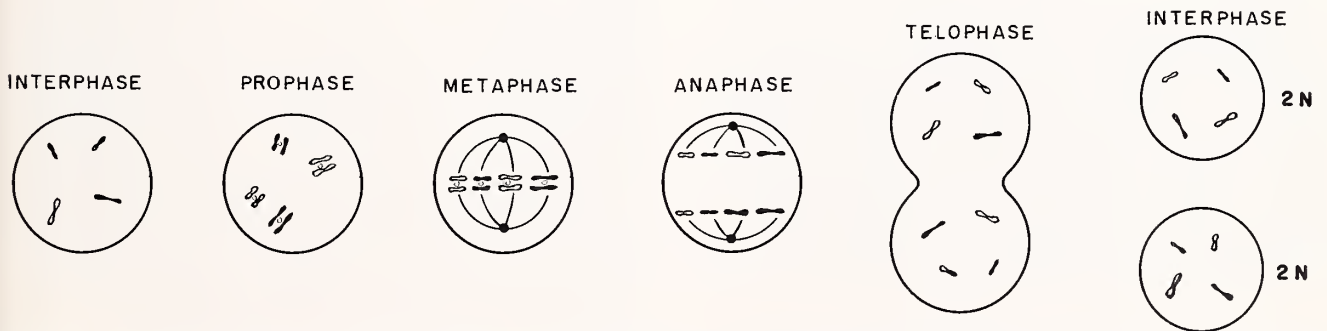


Figure 3. In normal mitosis, the two chromatids of each chromosome segregate, and the centromere divides into two centromeres.

NON-DISJUNCTION DURING MITOSIS

In some instances, for reasons not fully understood, the centromere of a chromosome may not split in the anaphase, and both chromatids then migrate to one daughter cell, where a delayed division of the centromere occurs and subsequent separation of the two chromatids takes place.

Result: Three clones of cells—one clone resulting from a normal mitosis with a normal diploid

($2N$) set of chromosomes (Figure 3), and two aneuploid clones, one with $2N + 1$ and one with $2N - 1$ chromosomes. If there is non-disjunction of an autosome, the cells of the clone with $2N - 1$ (i.e., 45) chromosomes are probably not viable. Mosaicism of two clones, one with 46 and the other with 47 chromosomes, is ultimately found. XO monosomic cells are viable. If there is non-disjunction of the sex chromosomes, a monosomic cell clone with 45 chromosomes may be found.

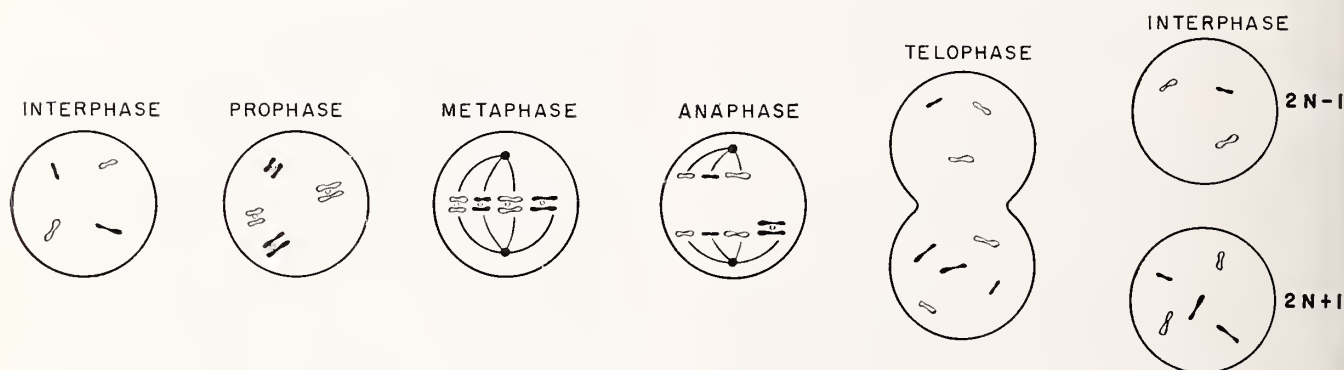


Figure 4. Non-disjunction during mitosis.

LOSS (LAG) OF A CHROMATID DURING MITOSIS

During anaphase, one chromatid lags behind and is eliminated from the cytoplasm. Therefore it does not participate in the formation of the nucleus of the daughter cell.

Result: One clone with $2N - 1$ and one clone with $2N$ chromosomes occur. The cells of the former clone are probably not viable if the aneuploidy is due to the loss of an autosome. If the aneuploidy is due to the loss of an X-chromosome, an XO/XX mosaicism may be found. This occurs in certain cases of Turner's syndrome.

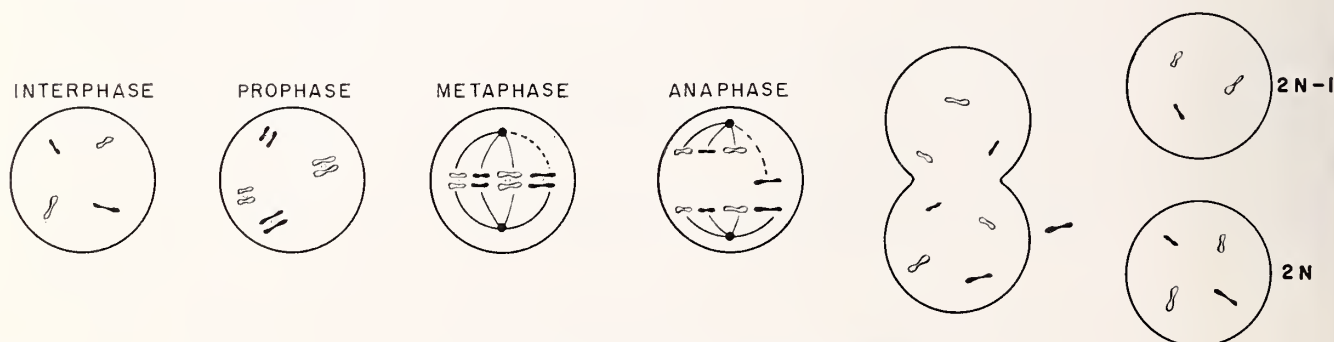


Figure 5. Loss (lag) of a chromatid during mitosis.

Example of Autosomal Mosaicism: Figure 6 is an example of 46/47 mosaicism with one euploid and one aneuploid clone, the latter trisomic for the No. 21 chromosome.

Chromosomal analysis revealed that this pa-

tient had a smaller clone with 46 chromosomes, a larger clone with 47 chromosomes and a trisomy 21. If less than half of the cells are trisomic, the phenotype is presumably normal. If more than half of the cells are trisomic for the No. 21 chromosome, *mongolism results*.



Figure 6. Mongoloid boy with mosaicism.



Figure 7. Idiograms and karyotypes of patient seen in Figure 6. Thirty-three per cent of the cells examined were euploid and 67 per cent were aneuploid in a 46/47 mosaicism.

NORMAL MEIOSIS

During the prophase of meiosis I, the two homologous chromosomes (one of paternal and one of maternal origin) come into close contact with each other and form the so-called bivalents. This process is called *synapsis*. Crossing-over or recombination—i.e., an exchange of allelomorphic gene material between homologous chromosomes—takes place during synapsis. In the metaphase, the bivalents align in the equatorial plane and split into two homologous chromosomes, each of which, with two chromatids, migrates to a different spin-

dle pole. Meiosis I is the only cell division in which the centromere remains intact and the two chromatids do not separate.

Result of First Meiosis: Haploid pregametic cells with 23 chromosomes.

The processes operating during the second meiotic division are the same, in principle, as those in mitosis (Figure 3), except that they take place in haploid cells with one set of 23 chromosomes instead of in a diploid set as in regular mitoses.

Result of Second Meiosis: Haploid gametes (sperms and ova) and polocytes.

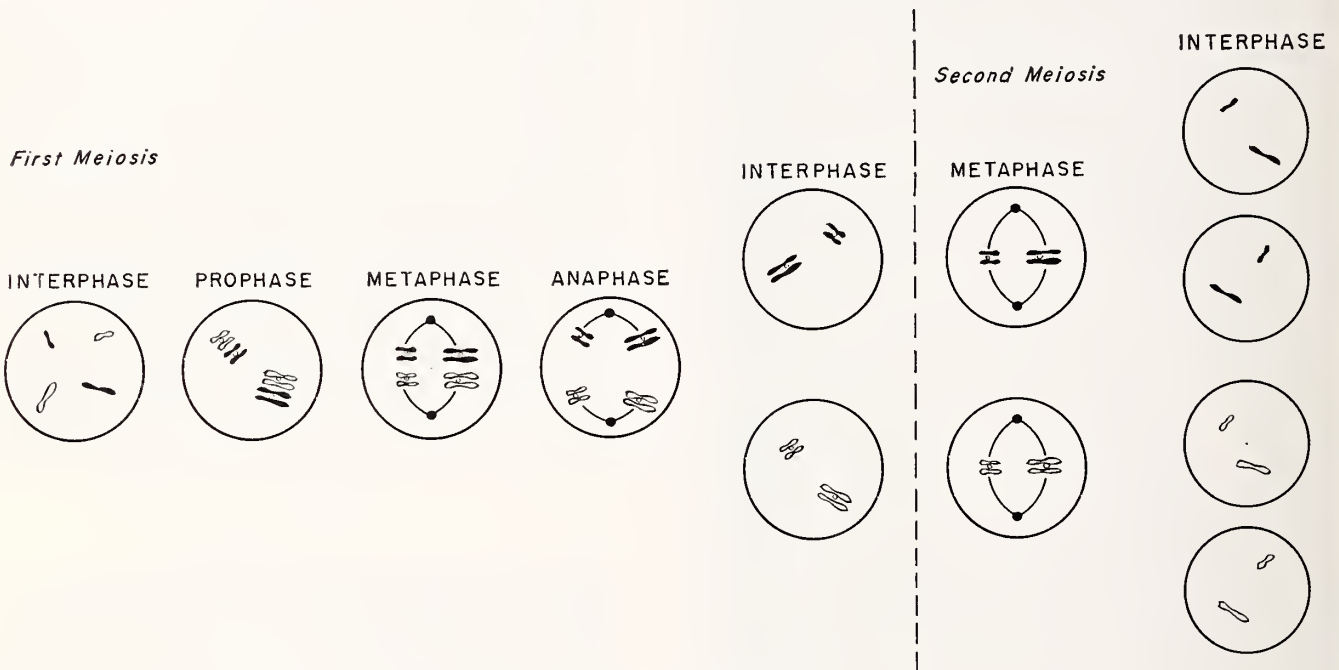


Figure 8. Normal meiosis.

NON-DISJUNCTION IN MEIOSIS I

Two pathogenetic mechanisms explain non-disjunction during meiosis I:

1. A bivalent may fail to divide into homologous chromosomes during metaphase and anaphase of meiosis I. Thus both chromosomes migrate to the same spindle pole.

2. One of two homologous chromosomes may be altered to an extent that a normal synapsis does not take place. Thus the two homologous chromosomes segregate independently from each other. Of the two chromosomes, one is of maternal and

the other of paternal origin. The probability that both migrate to the same daughter cell is 0.25.

Result of First Meiosis: Two aneuploid pregametic cells, one with $N - 1$ chromosomes and the other with $N + 1$ chromosomes.

In the second meiosis, the chromosomes divide in a normal fashion into two chromatids. Since the pregametic cells have $N + 1$ or $N - 1$ chromosomes, aneuploid gametes result.

Result of Second Meiosis: Aneuploid gametes (sperms or ova) and polocytes with $N + 1$ or $N - 1$ chromosomes.

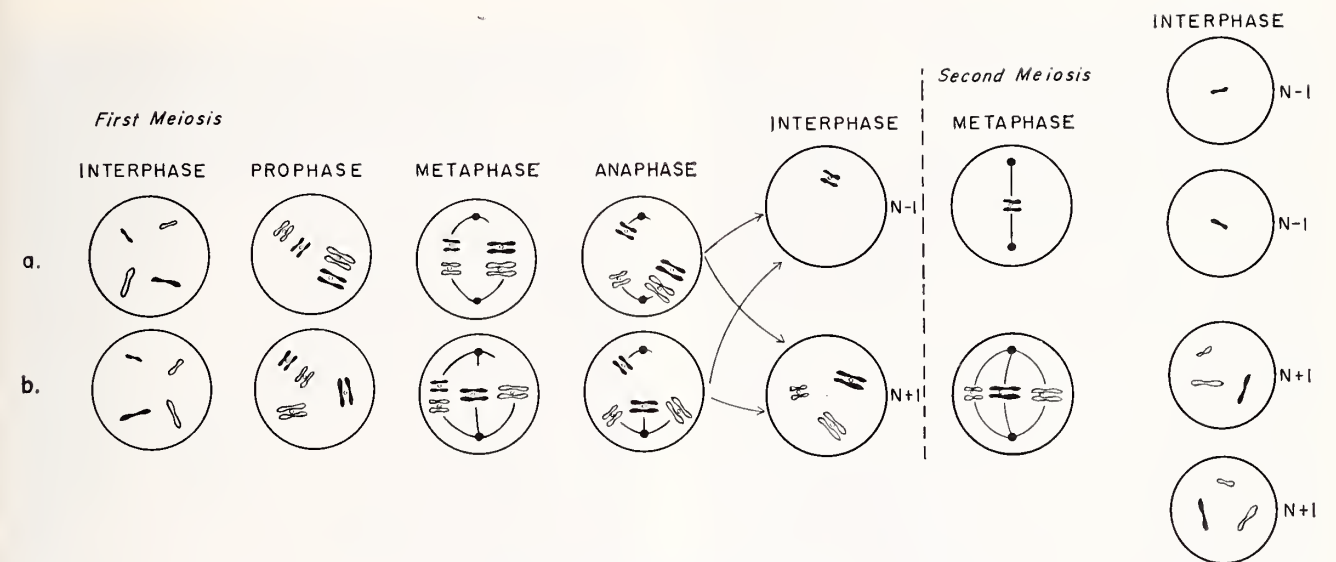


Figure 9. Non-disjunction in meiosis I.

NON-DISJUNCTION IN MEIOSIS II

The first meiosis has occurred in a normal fashion, as is seen in Figure 8. In the anaphase of meiosis II, the division of the centromere, and hence the segregation of the two chromatids, may fail to occur at the correct time, and may take place after the cell division has been completed. Both homologous chromosomes may be present in the same gamete, but both are either of maternal or paternal origin.

Result: Two aneuploid gametes, one with $N - 1$ chromosomes and the other with $N + 1$ chromosomes, the latter carrying one chromosome in duplicate.

Non-disjunction during meiosis II probably does not occur as frequently as non-disjunction during meiosis I.

Fertilization of a gamete with $N - 1$ chromosomes by a normal gamete (N chromosomes) of the other sex leads to a zygote with monosomy. The only monosomy known is XO (Turner's syndrome). Monosomy YO and autosomal monosomies are non-viable. Fertilization of a gamete with $N + 1$ chromosomes and a normal gamete (N chromosomes) of the other sex leads to a zygote with trisomy.

Second Meiosis

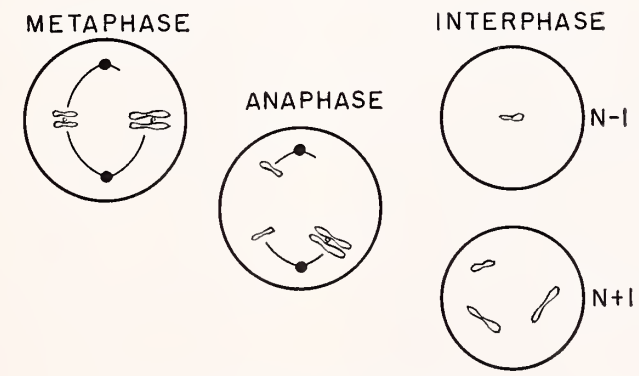


Figure 10. Non-disjunction in meiosis II.

AUTOSOMAL ANEUPLOIDIES

TRISOMY D OR 13-15

TABLE 2

CLINICAL SIGNS IN 17 CASES OF TRISOMY 13-15
AND 3 CASES OF PARTIAL TRISOMY 13-15

	17 Cases	3 Cases
Apparent mental retardation	12/12*	3/3
Failure to thrive	1/1	3/3
Convulsions	7/12	1/3
Muscular hypertonia	2/9	1/1
Muscular hypotonia	?	3/3
Arhinencephaly	5/8	?
Microcephaly	2/2	2/3
Sloping forehead	6/9	2/3
Facial asymmetry	?	2/3
Microphthalmia and/or coloboma	14/16	0/1
Stenosis of lacrimal ducts	1/1	2/3
Malformed ears	16/16	3/3
Aplasia of external auditory canal	?	2/3
Choanal atresia	1/1	0
Cleft palate and/or lip (11)	12/17	3/3
Small mandible	7/7	3/3
Hemangiomata	10/13	0/1
Polydactyly	14/15	0/3
Abnormal flexion of fingers	7/13	1/3
Retroflexible thumb	5/11	0/1
Horizontal palmar creases	12/15	0/1
Hyperconvex fingernails	6/10	0/1
Abnormal triradius (Dermatoglyph)	8/8	0/1
Hallucal Af-S (Dermatoglyph)	4/7	1/1
Prominent posterior heel	8/11	0/1
Congenital heart lesion	13/15	2/3
Accessory spleen	3/4	0/1
Large gall bladder	3/4	?
Umbilical hernia	6/10	0/1
Renal anomalies	7/10	1/3
Malrotation of intestines	6/8	0/1
Anal atresia, recto-vaginal fistula	0	1/3
Uterine anomalies	5/5	0/1
Scrotal anomalies, undescended testicles	5/5	
Sex	4 males, 14 females	
Race	12 Caucasian, 1 Negro	
Birth weight	Range: 1.7 to 3.4 Kg.; average: 2.7 Kg./11	
Duration of life	Range: 3.5 wk. to 22 mos.; average: 4.6 mos.**	
Age of mother	Range: 23 to 43 years; average: 31.3 years	

* Number of cases in which trait was found/number of cases examined for trait.
** One patient with partial trisomy died at 66 months; two patients with partial trisomy are still living at 36 and 90 months of age.



Figure 11. This is a case of partial trisomy 13-15. The diagnosis was suspected because the mother had had several abortions and because of the clinical appearance and history of the patient.



Figure 12. Idiogram and karyotype of patient seen in Figure 11. This patient had a partial trisomy 13-15. The supernumerary chromosome was smaller than the other D chromosomes. This was probably due to deletion of parts of the long arm of a supernumerary D chromosome.

TRISOMY E OR 16-18

TABLE 3

CLINICAL SIGNS IN 49 CASES OF TRISOMY 18

49 Cases*

Apparent mental retardation	35/35
Failure to thrive	41/41
Muscular hypertonia	28/32
Limited abduction of hip	17/18
Defect of corpus collosum	5/9
Prominent occiput	24/34
Ptosis of eyelids	8/26
Corneal opacities	4/13
Congenital glaucoma and optic atrophy	1/1
Low set ears	48/49
High arched palate	14/16
Small mandible	47/47
Abnormal flexion of fingers	46/47
Dactylograph: 8-10 digital arches	7/7
Syndactyly	14/32
Horizontal palmar crease	5/6
Dorsiflexion of great toe	21/26
Rockerbottom feet	15/34
Short sternum	28/32
Congenital heart defect	39/44
Interventricular septal defect	32/37
Interatrial septal defect	4/20
Patent ductus arteriosus	14/28
Diaphragmatic hernia	10/25
Inguinal and/or umbilical hernia	16/31
Meckel's diverticulum	10/21
Malrotation of intestines	4/18
Intestinal (anal) atresia	5/8
Heterotopic pancreatic tissue	8/14
Single umbilical artery	8/11
Renal anomalies	25/36
Undescended testicles	6/9
Sex	11 males, 31 females
Race	21 Caucasian, 1 Chinese, 1 Negro, 1 Puerto Rican
Gestation	28 to 44 weeks
Birth weight	Range: 1,275 to 3,070 Kg.; average 2,310/25
Duration of life	Range: 8 hrs. to 27 mos.; average 4.2 mos./22
Age of mother	Range: 17 to 46 years; average 34.8 yrs./27
Age of father	Range: 21 to 49 years; average 37.4 yrs./24

* Number of cases in which trait was found/number of cases examined for trait.



Figure 13. This is a case of trisomy 16-18. The patient was the fifth child in a family with no other cases of congenital defects or malformations.



Figure 14. Karyotype and idiogram of patient seen in Figure 13.

TRISOMY 21

MONGOLISM (DOWN'S SYNDROME)

Down's syndrome is the most frequent autosomal trisomy. In the majority of cases, the No. 21 chromosome is found in triplicate. In one to three per cent of all cases of Down's syndrome, a supernumerary chromosome No. 21 is translocated

(fused) with a No. 15, a No. 22 or another No. 21 chromosome. In some instances a similar translocation is found in other family members as well, notably in one of the parents. Normal family members with the translocation have 45 chromosomes (Figure 16). Familial translocation favors the occurrence of more than one mongoloid in a family (Figure 17). However, familial translocation is not the only cause of familial mongolism.

TABLE 4
SYMPTOMATOLOGY IN DOWN'S SYNDROME

	Small birth weight		Dubois sign; hypoplasia of middle phalanx V
Early infancy:	Very inactive and limp with poor sucking and swallowing reflexes		Y-line; gap between toes I and II; syndactyly; clubfoot
	Small size and underweight		Small acetabular and iliac angle
Later infancy and childhood:	Brachycephaly; small face; hypoplasia of maxilla		Laxity of skin; muscular hypotonia
	Delayed closure of sutures		Frequent malformations
	Sunken bridge of nose; underdeveloped sinuses		Congenital heart defects (especially septal defects and tetralogy of Fallot)
	Small orbitae; epicanthus; slanting eyes		Intestinal stenosis and atresia
	Brushfield's spots; short, sparse eyelashes		Hypoplastic vasculature
	Cataracts; blepharitis; conjunctivitis		Low set umbilicus; umbilical hernia
	Small, overlapping, right-angled helix and flat tragus		Delayed testicular descensus; short penis
	Fissured lips; scrotal, protruding, thin tongue		Genital hypoplasia; hypospadia
	Delayed dentition, 9 months to 5 years		Constipation
	Irregular eruption and abnormal alignment of teeth		Insufficient thermoregulation susceptibility to infections; tendency to leukemia
	Microdontia; paradentosis; gingivitis	Adolescence:	Mental retardation, somewhat stubborn but able to imitate
	Raucous, low-pitched voice		Good natured and lovable
	Short fingers and toes; clinodactyly		Decreased secondary sex characteristics
			Delayed menarche (and early menopause)
			Sterility in males

NONE OF THESE SIGNS AND SYMPTOMS IS CONSTANT OR PATHOGNOMONIC

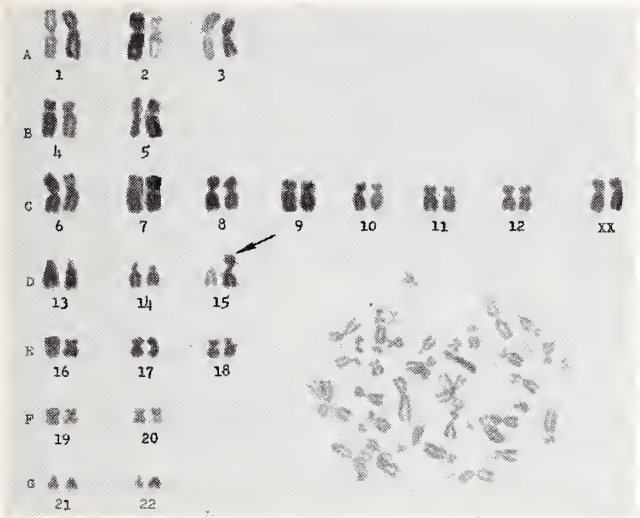


Figure 15. Mongoloid child with 46 chromosomes and a 15/21 translocation.

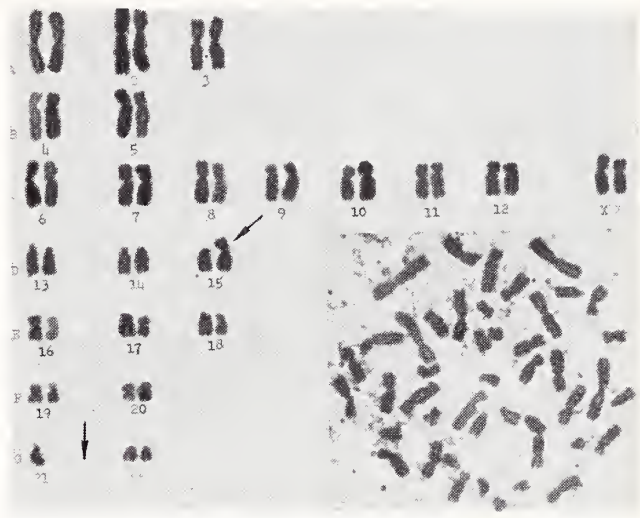


Figure 16. Mother of two mongoloid children. Her karyotype shows 45 chromosomes with a 15/21 translocation.

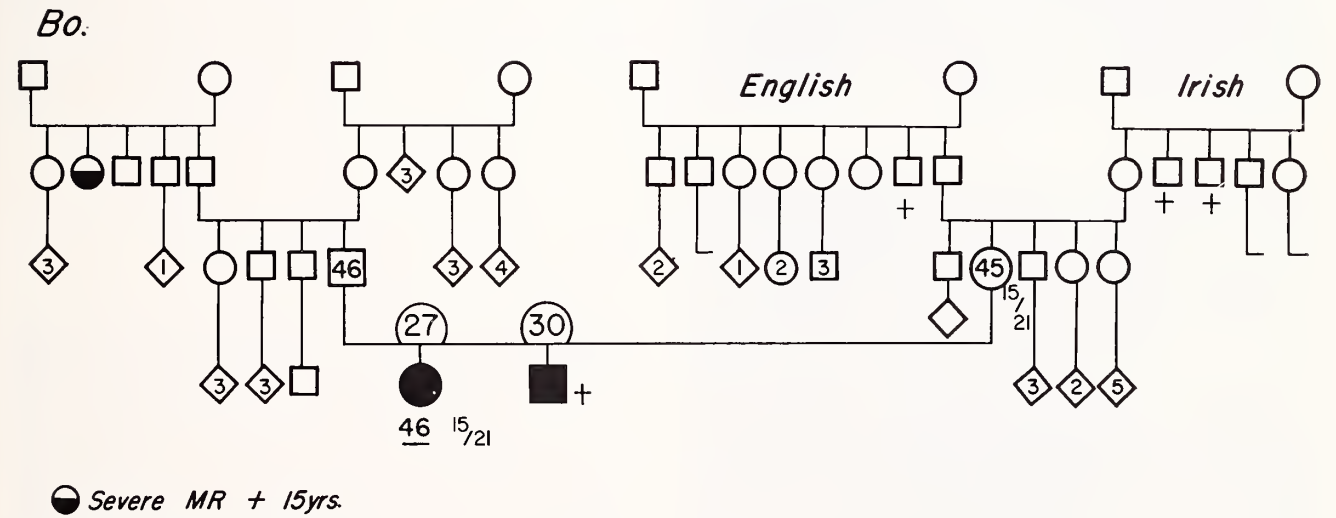


Figure 17. Pedigree of a family with a 15/21 translocation in the mother (Figure 16) and two mongoloid children (Figure 15 shows the karyotype of one of them).

SEX CHROMOSOMAL ANEUPLOIDY

NON-DISJUNCTION IN OVOGENESIS

Sex-chromosomal non-disjunction of the ovogonia leads to ova with either two X-chromosomes or none at all. Fertilization with a Y-containing sperm leads either to a YO zygote, which is non-viable, or to an XXY zygote, resulting in Klinefelter's syndrome (Figure 23). Fertilization with an X-containing sperm leads either to an XO (Turner's syndrome) or to an XXX (super or meta-female) zygote.

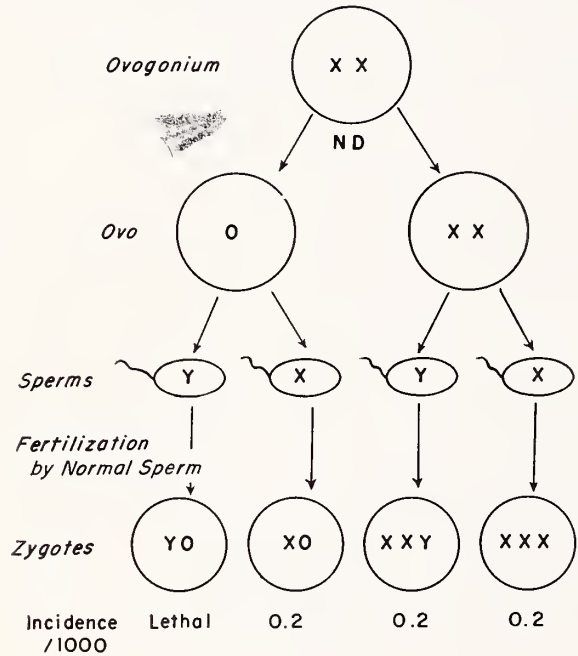


Figure 18. Non-disjunction in oogenesis.

NON-DISJUNCTION IN SPERMATOGENESIS

Sex-chromosomal non-disjunction during the first reduction division of spermatogenesis leads to sperms with no sex chromosomes or to sperms with an XY sex-chromosomal complement. Non-disjunction during the second meiotic division leads either to sperms with no sex chromosome or to sperms with an XX or YY sex-chromosomal complement. Fertilization of a normal ovum by a sperm without a sex chromosome leads to an XO zygote, resulting in Turner's syndrome. Presumably, sperms without sex chromosomes are non-viable or unable to compete with other sperms. Hence, XO zygotes as products of the fusion of X-ova and O-sperms are exceedingly rare.

Fertilization of a normal ovum by an XY-sperm leads to an XXY zygote, resulting in Klinefelter's syndrome. The total incidence of Klinefelter's syndrome is about 1.05 per 1,000 (see Table 8). The product of fusion of an XX-ovum and a Y-sperm occurs 0.2 times per 1,000. Hence, 0.85 aneuploid conditions per 1,000 population are due to the fusion of an aneuploid XY-sperm with a normal ovum.

Fertilization of a normal ovum by an XX-sperm leads to an XXX (trisomy X) zygote, resulting in a super-female. The total incidence of trisomy X is about 0.6 per 1,000. If we assume that 0.2 per 1,000 are caused by an aneuploid ovum (Figure 18), we can conclude that 0.4 X-trisomic zygotes per 1,000 are caused by aneuploid XX-sperms. Hence, the number of X-trisomic zygotes due to XX-sperms is about one-half of the total of XXY zygotes due to XY-sperms. This ratio corresponds to the theoretically expected one: 25 per cent XY sperms: 12.5 per cent XX sperms.

Fertilization of a normal ovum by a YY-sperm leads to an XYY zygote, resulting in a phenotypically-normal male. Since normal individuals haven't usually been karyotyped, only a few XYY individuals have been reported thus far. Thus the incidence of XYY zygotes is unknown.

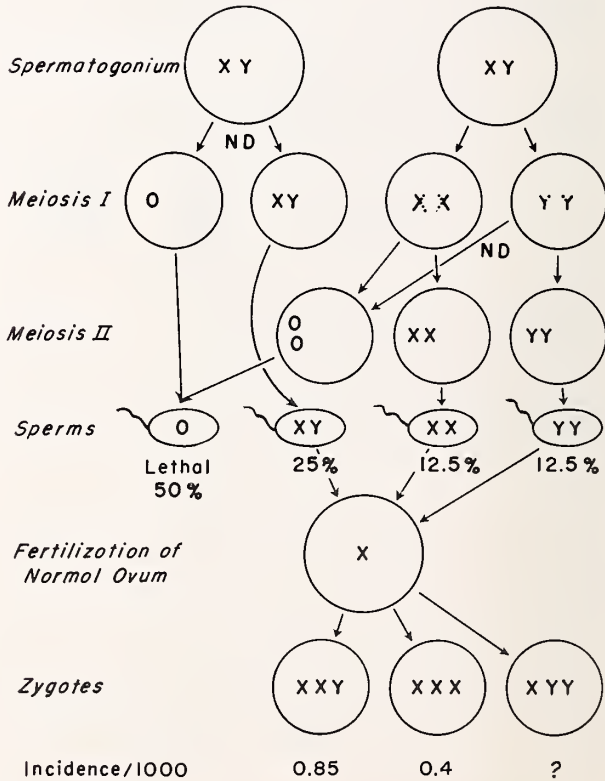


Figure 19. Non-disjunction in spermatogenesis.

TURNER'S SYNDROME OR OVARIAN
DYSGENESIS

Eighty per cent of all Turner's have 45 chromosomes with an XO sex-chromosomal complement. They are sex-chromatin negative. Twenty per cent of all Turner's have 46 chromosomes with an XX sex-chromosomal complement. These individuals are sex-chromatin positive. A certain number of cases of Turner's syndrome show a sex-chromosomal mosaicism.

Treatment with estrogens to develop secondary sex characteristics and menstruation begins at the age of normal puberty, and must continue until the normal time for menopause.

TABLE 5

SYMPTOMATOLOGY IN TURNER'S SYNDROME

- Short growth and delay of bone maturation
- Absence or paucity of secondary sex characteristics
- Primary amenorrhea
- Hypoplasia of ovaries and absence of follicles
- Pterygium formation (webbing)
- Micrognathia
- Epicanthus
- Short neck with deep nuchal hairline
- Shield chest with increased distance of mammillae
- Cubitus valgus and nail hypoplasia
- Intelligence normal or slightly decreased
- Coarctation and renal anomalies
- Decreased or normal urinary 17 ketosteroids
- Urinary gonadotropins increased or normal



Figure 20. Idiogram and karyotype in Turner's syndrome.

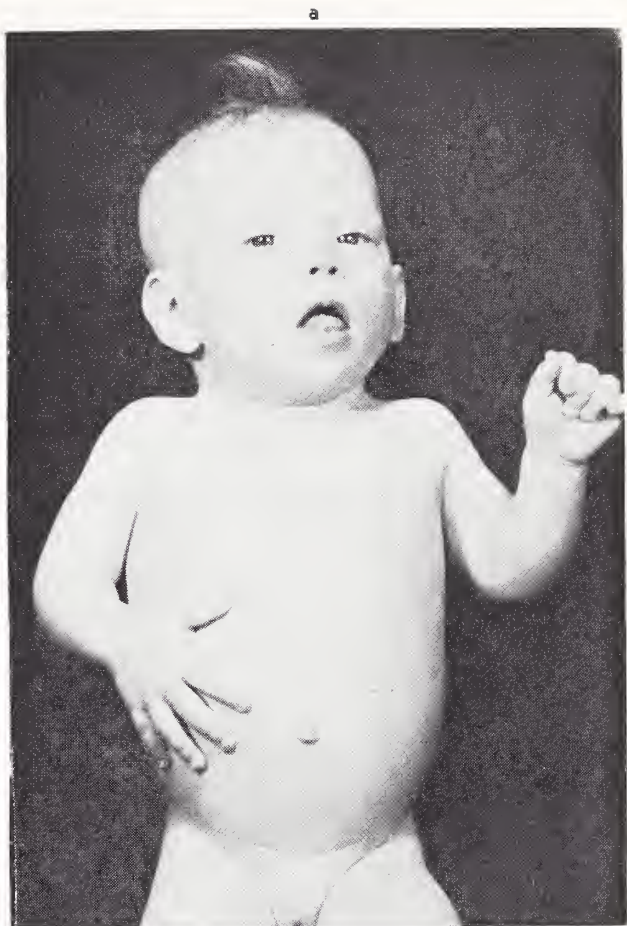


Figure 21. Turner's syndrome in infancy and early adolescence.

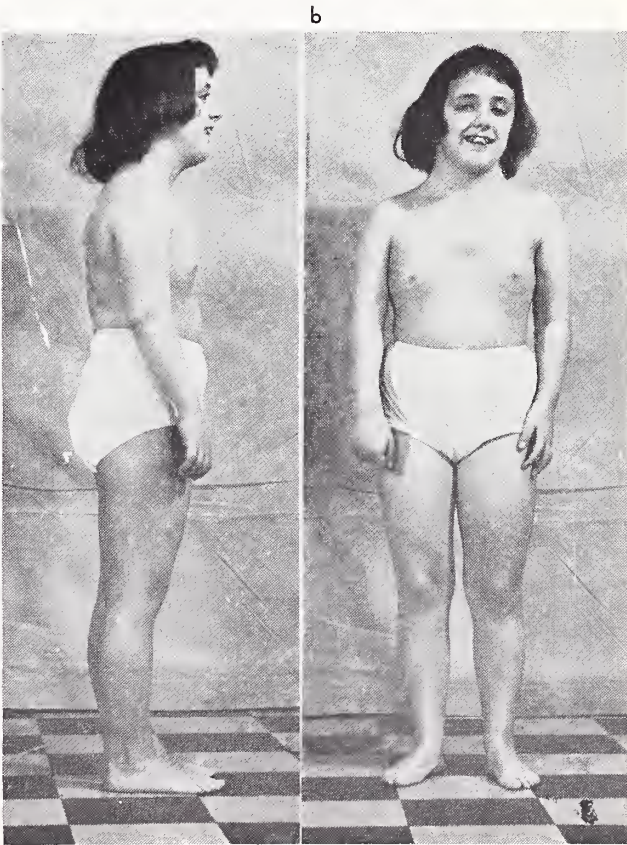




Figure 22. Feet of a newborn with Turner's syndrome. Turner's syndrome is suspected in infancy when edema of hands and feet is present, and when other causes of neonatal edema such as nephrosis, renal diseases, hypocalcemia and hypoproteinemia have been excluded. A sex-chromatin determination by buccal smear is indicated in such cases.

KLINEFELTER'S SYNDROME OR TESTICULAR DYSGENESIS

Karyotypes in Klinefelter's syndrome cases usually show 47 chromosomes with an XXY sex-chromosomal complement. In rare instances there are 48 chromosomes with an XXYY or XXXY, or 49 chromosomes with an XXXXY sex-chromosomal complement, or various mosaics. In spite of the male phenotype, these patients are sex-chromatin positive. Sex-chromatin negative Klinefel-

ter's syndrome has been described, but it is not considered a true Klinefelter's syndrome.

TABLE 6	
SYMPTOMATOLOGY IN KLINEFELTER'S SYNDROME	
Eunuchoid body proportions	
Gynecomastia	
Penis and testes small	
Secondary sex characteristics decreased	
Mild mental retardation in less than 20 per cent of cases	
Male phenotype, but a positive sex chromatin	
Urinary 17-ketosteroids decreased	
Urinary gonadotrophins increased	

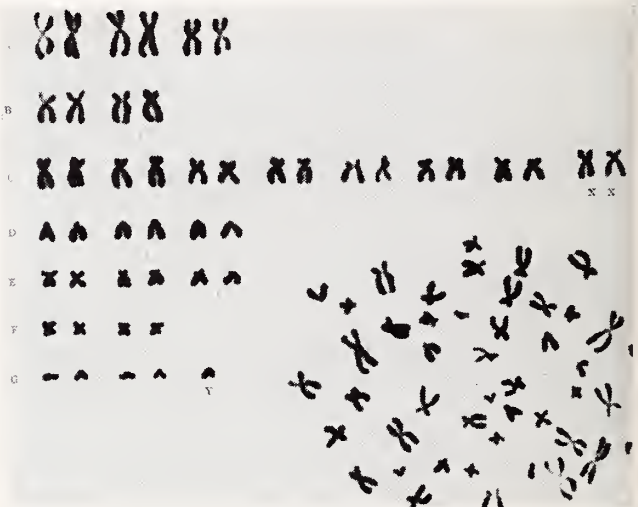


Figure 24. Idiogram and karyotype of patient seen in Figure 23.

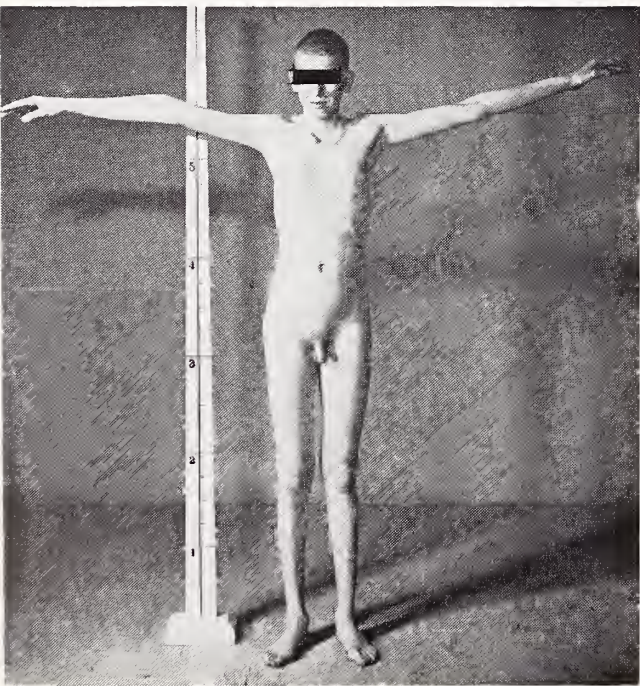


Figure 23. Twenty-year-old male with Klinefelter's syndrome.

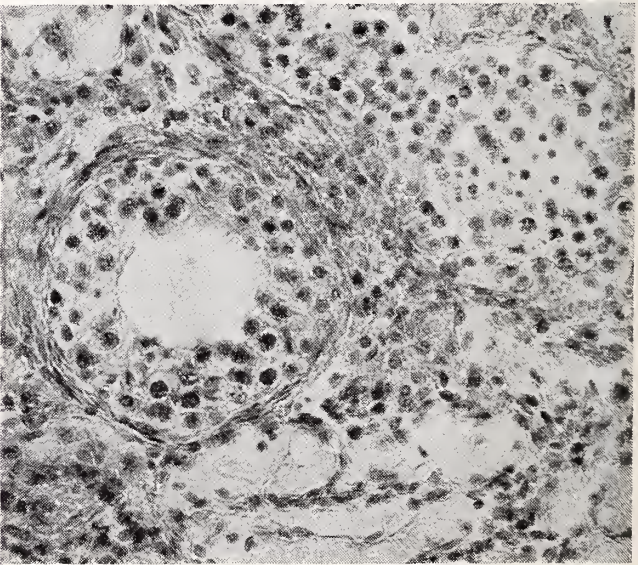


Figure 25. Testicular biopsy of Klinefelter's syndrome case. This shows increased interstitial tissue, partly sclerotic seminiferous tubules and insufficient spermatogenesis. (We are grateful to Drs. R. Bunge and J. Bradbury, of the S.U.I. Departments of Urology and Obstetrics & Gynecology, for supplying this photograph.)

TABLE 7

INCIDENCE OF ANEUPLOID CONDITIONS

		Per 1000 population
A. Sex chromosomes		
Monosomy:	XO—Turner's syndrome	0.20
Trisomies:	XXY—Klinefelter's syndrome (also XXYY, XXXY, XXXXY)	1.05
	XXX—Meta—(super) female (also XXXX)	0.60
INCIDENCE OF SEX CHROMOSOMAL ANEUPLOIDY		1.85
B. Autosomal chromosomes		
Trisomy 21	Down's syndrome (mongolism)	1.60
Trisomy 13-15 (D ₁)	Multiple malformations	? * (17 cases known)
Trisomy 16-18 (18, E)	Multiple malformations	? * (49 cases known)
C. Mosaicism		
46/47	Normal	
46/47 and 46/47/48	Down's syndrome (mongolism)	rare
XO/XX, XO/XX/XXX	Turner's syndrome	rare
XXY/XXXY, etc.	Klinefelter's syndrome	rare
D. Polyploidy		
Triploidy (3N) and tetraploidy (4N) are found in some cells of patients suffering from cancer or leukemia.		
TOTAL INCIDENCE OF ANEUPLOIDY: One per 200 to 300 individuals		

* Presumably most of the zygotes with trisomy 13-15 and trisomy 16-18 are not viable and are aborted during early pregnancy. Only a few resistant cases survive the total period of gestation, and these usually die in infancy.

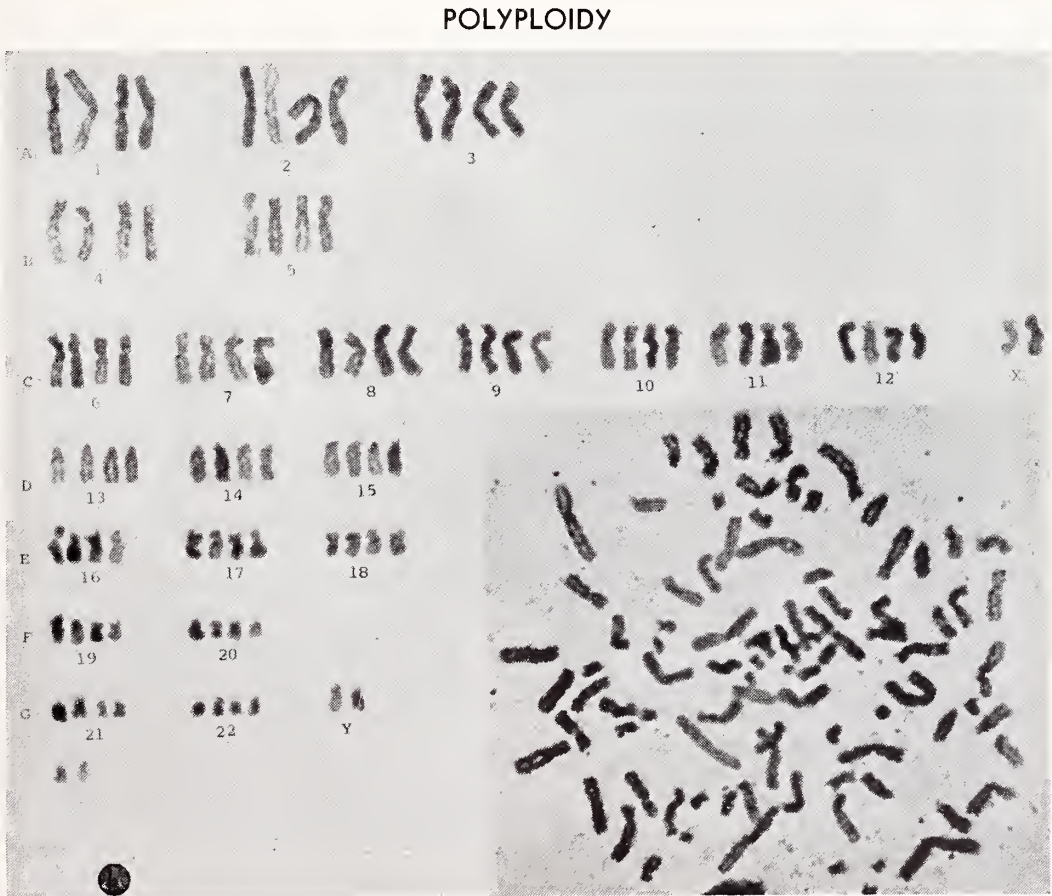


Figure 26. Idiogram and karyotype of a tetraploid cell of a 15-year-old boy with myelogenous leukemia.

NUCLEAR SEX

Nuclear sex can be determined in the cell nuclei of all human tissues. For practical purposes, epithelial cells of the oral mucosa (buccal smear) and/or the segmented neutrophils of the peripheral blood are used. Sex-chromatin bodies in the epithelial cells of the oral mucosa are characterized by a dark chromatin mass adhering to the nuclear membrane and measuring about 0.8 to 1.1 micra.

Normal males with an XY sex-chromosome complement are sex-chromatin negative. Normal females with an XX sex-chromosome complement are sex-chromatin positive. Nuclear sex determinations in sex-chromosomal aneuploidies revealed that individuals with three or more X-chromosomes have two or more sex-chromatin masses, and the following formula was derived: Number of sex-chromatin masses + 1 = Number of sex chromosomes.

Recent research has presented evidence that only one X-chromosome is genetically active in transmitting genic information. The additional X-chromosomes are genetically inactive, heterochromatic, and later in DNA replication. It has thus been concluded that the sex-chromatin masses represent the interphase of the genetically inactive X-chromosomes.

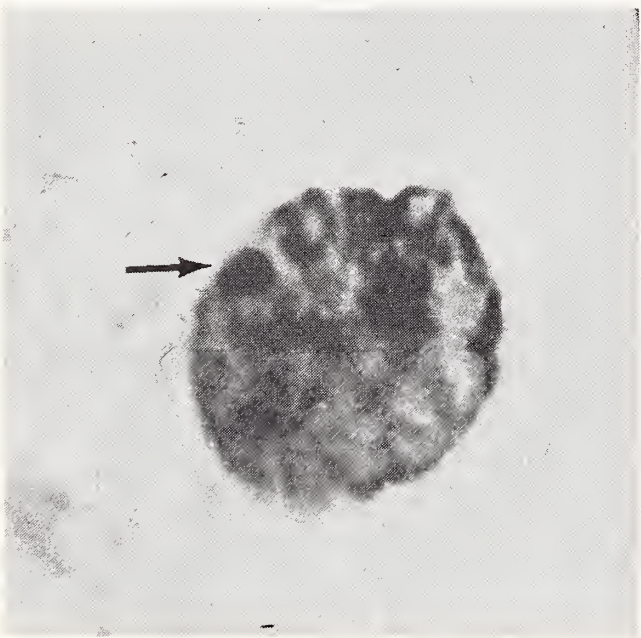


Figure 27. Barr body in epithelial cells of the oral mucosa. An individual is sex-chromatin positive when 30 to 40 per cent of the epithelial cells contain the sex-chromatin mass that is called a Barr body.

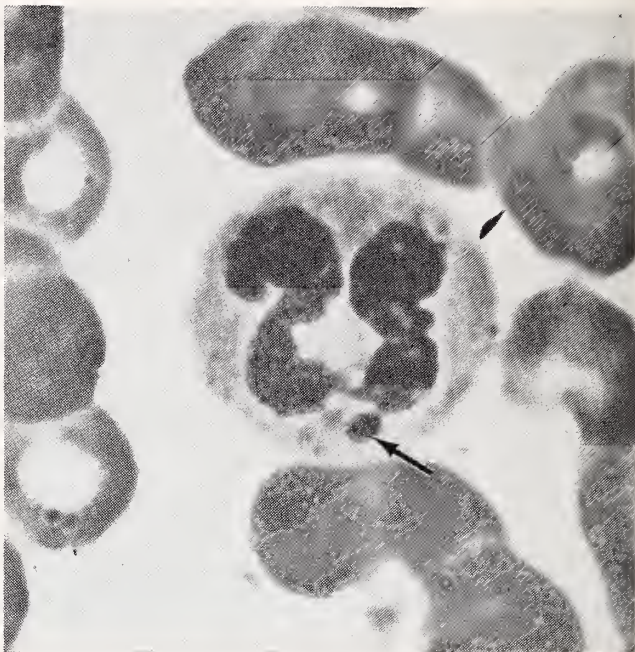


Figure 28. Drumstick in a segmented neutrophil. This drumstick-like appendage is equivalent to a Barr body. An individual is sex-chromatin positive if the drumstick is found in 4 to 6 per cent of all segmented neutrophils.

TABLE 8
SEX CHROMATIN AND CLINICAL CONDITION

Sex chromatin negative:	
Normal male—XY	
Testicular feminization—XY	
Turner's syndrome—XO	
Sex chromatin positive:	
One sex-chromatin mass:	Normal female—XX
	Klinefelter's syndrome—XXY and XXYY
Two sex-chromatin masses:	Trisomy X (XXX)
	Klinefelter's syndrome—XXXY
Three sex-chromatin masses:	Tetrasomy X (XXXX)
	Klinefelter's syndrome—XXXXY

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2. McKusick, V. A.: On X-chromosome of man. Ann. Intern. Med. 56: 991-996, (June) 1962.
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Clinical Pathologic Conference

CLINICAL SUMMARY

A 73-YEAR-OLD WHITE WOMAN had enjoyed excellent health until five months before her death, when she had an episode of pneumonia and congestive heart failure. This illness had responded readily to treatment with antibiotics and digitalis. Afterwards, she had done well for two months. Then she had suffered from headaches and malaise, but had not sought treatment. Ten days before admission, she had noted a scant urinary output, and entered a local hospital. At that time, the blood urea nitrogen was 80 mg./100 ml. A urinalysis showed red cells, proteinuria and casts. The oliguria had progressed, so that seven days later she had been totally anuric, and the BUN had risen to 102 mg. per cent. A right ureteral catheterization and retrograde pyelogram had been normal. A peritoneal dialysis was done with poor results, and she was transferred to University Hospitals. There was no history of hypertension. She complained of no pain during the present illness. Nausea and vomiting occurred during the period of anuria.

Physical examination revealed a moderately obese white woman who was tachypneic and acutely ill. The blood pressure was 170/80 mm. Hg; the pulse rate was 88 per minute and regular. The left optic fundus could not be seen because of a cataract, but the right fundus appeared normal. The oral mucosa was dry and crusted. There were scattered crepitant rales in both bases. The left ventricle was 1+ overactive, and there was a grade II apical systolic murmur which did not radiate. The abdomen was normal except for obesity. There was a recent paracentesis scar. Rectal and pelvic examinations were normal except for a slight cystocele-rectocele. There was no flank tenderness.

On admission, the hemoglobin was 11 Gm./100 ml. The white blood cell count was 12,000/cu. mm., and the differential blood smear was interpreted as normal. The hematocrit was 36 per cent. The sedimentation rate was 117 mm./hr. A small amount of urine present in the bladder showed a pH of 7.3, 4+ protein, a trace of sugar, a Fantus

test for chloride of 4 Gm./L. and many red blood cells. The serum sodium was 120, the potassium 5.9, the CO_2 11.6, and the chloride 84 mEq./L., and the calcium 8.9, the phosphorus 7.2, the BUN 75, and the creatinine 15.6 mg. per cent. An electrocardiogram was interpreted as normal. Cystoscopy was done and showed a mild trigonitis attributed to the Foley catheter. A left ureteral catheterization was done. No urine returned and no obstruction was encountered. Left retrograde pyelography showed changes interpreted by the urologist as being compatible with chronic pyelonephritis, with two small areas of calcification which were thought to be non-obstructive stones. The radiologist interpreted the pyelogram as showing no blunting or dilatation of the collecting system, but displaying bilateral renal calculi. The chest roentgenogram showed left ventricular hypertrophy and minimal pulmonary venous congestion.

The patient was placed on a diet of 2,000 cal./day containing less than 30 Gm. of protein and a low potassium constituent. The water intake was limited to 700 ml./day. On the second hospital day the BUN was 170, and the creatinine 17 mg. per cent, and the potassium was 7.3 mEq./L. Extracorporeal dialysis was carried out for six hours on the third hospital day.

She was placed on digitoxin. The following day the BUN was 100 and the creatinine 11.5 mg. per cent, and the potassium 5.7 mEq./L. She weighed 167 lbs.

She was given a diet of butter balls and rock candy, and her fluid intake was limited to 700 ml./24 hrs. On the fifth hospital day the BUN was 110 and the creatinine 14.0 mg. per cent, and the potassium 5.5 mEq./L. She weighed 163 lbs.

She was given an ammonium-potassium ion exchange resin. The potassium fell to 5.1 mEq./L. in the succeeding three days, and the exchange resin was stopped. Except for a small amount of fluid present in the bladder on admission, she produced no urine during her hospital stay.

On her eleventh hospital day the BUN was 180 and the creatinine 16.1 mg. per cent and the potassium was 6.0, the sodium 133, the chloride 90 and

the CO_2 16 mEq./L. She weighed 157 lbs. Extracorporeal dialysis was repeated. After 30 minutes of dialysis, she had a general tonic convulsion and dialysis was stopped. However, she became apneic, failed to respond, and died.

Dr. R. F. Sheets, Internal Medicine: Mr. Spooner will discuss this protocol for the junior students.

Mr. Thomas Spooner, junior ward clerk: We wondered whether any record was made of blood pressures during the patient's stay in the hospital, and what her temperature record was during her hospitalization.

Dr. Sheets: She had a flat temperature curve. Her blood pressure was 200/100 mm. Hg.

Mr. Spooner: The electrolytes showed the profile of a patient with uremia. The sodium was probably depressed because of a dilutional hyponatremia, and probably the CO_2 was down because of the metabolic acidosis. The potassium probably was up because of the triad of acidosis, oliguria, and the movement of intracellular potassium into the vascular compartment. The rise in BUN and creatinine certainly was indicative of kidney disease of some sort. Also, as is commonly seen in uremia, the potassium was elevated and the calcium was low. The explanation could have been a rise in the BUN, causing a decrease in the absorption of calcium from the gut. At the same

time, the anuria caused a retention of phosphorous. Then a left retrograde pyelogram showed changes interpreted by the urologist as compatible with chronic pyelonephritis, with two small areas of calcification which were thought to be non-obstructive stones.

The radiologist was apparently more cautious in his interpretation of these films, for he said the pyelograms merely displayed bilateral renal calculi without blunting or dilatation of the collecting systems. I wonder whether we could have some comment on the roentgenograms.

Dr. Eugene F. Van Epps, Radiology: The preliminary roentgenogram of the abdomen, with a left ureteral catheter in place (Figure 1), revealed a calcific density overlying the tip of the catheter. On the right, you see another area of calcific density within the air bubble. It was our impression that bilateral renal calculi were present. Following the retrograde instillation of contrast material, there was visualization of a normal pelvis and calyceal system. The mild dilatation of the upper-pole calyces was, in our opinion, due to the pressure of the injection and not due to pyelonephritis.

Figure 2 is a portable roentgenogram of the chest. Portable films leave much to be desired because the patients are ill and many times cannot cooperate satisfactorily. In this obese woman, there

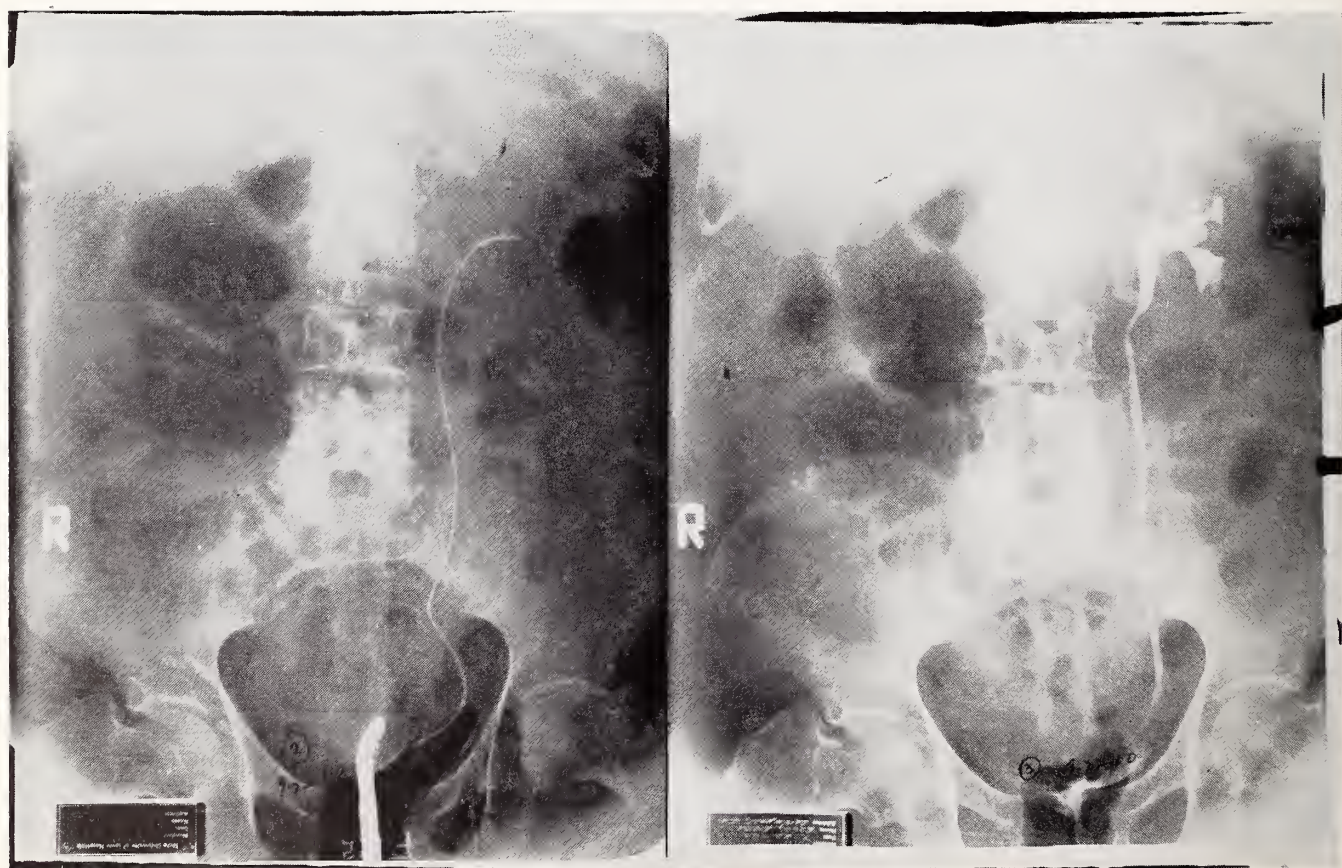


Figure 1. Left retrograde pyelogram. Bilateral renal calculi are evident. There is no pyelonephritis or obstructive uropathy.

was hypoventilation of the lungs and elevation of the leaves of the diaphragm, with a consequent spurious increase in the bronchovascular markings of the lungs. I do not believe there was any congestive heart failure or pleural effusion. The heart was increased in size, with evidence of left ventricular hypertrophy, elongation, tortuosity and calcification in the aorta.

Our impression, therefore, was bilateral renal calculi, and hypertensive and arteriosclerotic heart disease without cardiac failure.

Mr. Spooner: I proceeded to devise a list of possible causes of anuria and uremia. I chose to divide them into renal and extra-renal causes. The extra-renal causes are (1) shock, (2) severe congestive failure, (3) blood transfusion reactions, (4) obstetrical complications, (5) the hepatorenal syndrome in patients with severe hepatic insufficiency, (6) rarely hypercalcemia, and finally (7) poisoning with drugs such as tetracycline or the sulfonamides. The first five of these can probably be ruled out on the basis of the patient's history. Hypercalcemia is unlikely because her serum calcium was 8.9 mEq./L. on admission. However, since we don't know the serum proteins in this patient, we really can't tell whether that was the actual value of her calcium. Of the extra-renal causes, probably the most likely diagnosis is drug toxicity causing a lower nephron nephrosis. The patient did give a history of receiving antibiotics on her first hospital admission, and perhaps they could have set up a toxic reaction.

Of the renal causes of anuria and uremia, the first is chronic glomerulonephritis. Against this appear to be: (1) Marked cardiomegaly is seen in most patients with chronic glomerulonephritis, but is absent here. (2) The extreme degree of hypertension and associated retinal changes were absent. (3) In a disease such as chronic glomerulonephritis, with a high degree of renal insufficiency, one generally finds a higher degree of anemia than was seen in this instance.

Renal-vein thrombosis must be considered. This process is generally quite acute, and quite a bit of pain is associated with it. However, no mention was made of pain in the protocol. There can also be a slow process in the renal vein without pain, but when this occurs, one generally sees a massive nephrotic syndrome and considerable leg edema. These were not reported in this case.

Chronic pyelonephritis could be a good possibility in this patient, for one third of all deaths in uremia are caused by this condition. The patient had not had hypertension, but did develop it, and so this could also favor chronic pyelonephritis. However, there was no history of recurrent urinary-tract infection.

Pyuria is not mentioned, and there is no mention of white blood cells in the urine. This is often an acute process, but, of course, it could repre-



Figure 2. Portable chest film. Left ventricular hypertrophy, arteriosclerosis of aorta, without evidence of failure or pleural effusions.

sent an acute exacerbation of chronic pyelonephritis.

We must consider obstruction when an episode of oliguria occurs and is followed by anuria. However, the retrograde pyelograms probably ruled this out.

Polycystic kidney disease, secondary amyloidosis, diabetic nephropathy, and necrotizing papillitis should be considered. However, I chose to rule these out for two reasons: first, the lack of an appropriate history, and second, the lack of appropriate clinical and laboratory findings.

There is a last possible choice: acute renal failure and anuria from acute glomerulonephritis. Generally, acute glomerulonephritis is seen in children, but it can occur in adults, and when it does occur in them, it is usually quite severe. This patient did have hematuria and proteinuria, which are commonly seen in acute glomerulonephritis. Since we have no information about the infecting organism implicated at the time of her original hospitalization, we can't tell whether it was a group-A streptococcus or not. However, she might have had a subclinical infection while at home.

In summary, we feel the patient died of acute renal failure, with convulsions probably associated with intracranial hemorrhage or electrolyte imbalance. My colleagues and I feel that the most likely cause of the acute renal failure in this pa-

tient was acute glomerulonephritis. Other diseases that can be considered are chronic pyelonephritis, a drug reaction, bilateral renal-vein thrombosis and perhaps a collagen vascular disease.

Dr. Van Epps: The diagnosis of pyelonephritis is made earlier by the clinician than by the radiologist. Stones indicate the likelihood of structural changes, but sufficient distortion of the renal architecture must occur before it can be demonstrated radiographically.

Dr. Sheets: Dr. Bean will present the discussion for the staff.

Dr. William B. Bean, Internal Medicine: The clear analysis of the problem by Mr. Spooner summarizes what must have gone through the minds of the people who had to take care of this woman when she came in with her rapidly fatal illness including uremia. The past history of this woman was singularly negative. A negative past history may mean that the patient has been well all her life; it may mean that the physician did not ferret out certain relevant parts of the history and thus knows nothing of them; or it may mean that the patient was so ill that one could get no picture of what had led up to her disease. We have no way of knowing whether this woman ever had had pyelonephritis, chills and fever in pregnancy with obvious infection, glomerulonephritis, acute Bright's disease or scarlet fever. In renal disease congenital anomalies or malformations are likely to trouble the patient earlier than in the eighth decade.

In this woman of 73, I think we can exclude congenital anomalies such as polycystic kidneys as a cause of her troubles. In short, what was wrong with this woman's kidneys? Did it have any relationship to the illness she had had five months earlier? Afterwards she had felt fairly well for two months. Then she began to feel sick again, and was admitted to another hospital with uremia. One would very much like to know whether she had had any other diseases. Several conditions suggest themselves as clues to renal lesions, but since we have a negative past history, we have no evidence of them. If we introduce them, we do so at our own hazard, obviously making a guess.

What are the common causes of fatal uremia in a woman who has been quite well after an illness of either a few weeks or a few months? Since we have good evidence from the one eyeground examination, we can assume, on a statistical basis, that she did not have longstanding hypertension. Her blood pressure of 200/100 mm. Hg, a very high pulse pressure is the kind that we may see in older people with fairly rigid, medium-sized arteries.

If we approach the problem by statistical analysis we can try to exclude some diseases and see what are left. She had had an attack of what was called pneumonia, and with it she had developed

congestive failure. If these clinical diagnoses were correct, they were unusual, for in an elderly person who has never had heart disease, pneumonia rarely precipitates congestive failure. She did have a systolic murmur. This might suggest that she had a dilated heart, but the roentgenograms taken under unfavorable conditions certainly didn't give any indication of congestion of the kind we should expect in congestive failure, nor did she have an enlarged heart. Though a remote possibility, calcific aortic stenosis should be mentioned, for sometimes the loudest murmur is heard at the apex rather than at the base. If she had aortic stenosis, it was totally unrelated to the basic problem.

Was there any connection between her illness that had been diagnosed as pneumonia and her heart failure and the subsequent development of her fatal trouble? There is such a possibility, although I think it is remote. She might have experienced a pulmonary infarction rather than pneumonia, and this would have been more likely to precipitate congestive failure.

If she did have pneumonia and was treated with antibiotics of unknown or unspecified kinds, is there a likelihood that she had developed sensitivity angitis? That might easily produce a diffuse or rather gross lesion in the renal arterial systems. Its widespread damage could put the kidney into a state where the urine contained red cells and increasing and intractable uremia.

There was no clinical sign of polyarteritis. She had no neuropathy. She had no eosinophilia. I merely mention polyarteritis, for when one sees such a sequence of catastrophic developments occurring close together in a person who has hitherto been well, one needs to see whether they may be interrelated.

Another generalization: The older the patient, the less important it is for the clinician to try to explain all of the findings on the basis of a unitary concept or a single diagnosis. In old people, you are likely to find many diseases with many effects, and you need try less diligently to fit all problems into one single disease pattern. There was no indication of empyema, chronic sepsis or bacterial endocarditis with lesions of the kidney.

What was the significance of the stone in the kidney? Stones do not belong in the kidney. They sometimes bring pleasure to urologists, but anything but pleasure to the person who happens to have the stones. This woman did not even know that she had one, and apparently it produced no symptoms whatever. As I listened to the interpretation of the films by Dr. Van Epps, it did not seem to me that the stones were causing her renal disease, an obstructive uropathy with localized pyelonephritis, or hydronephrosis. Therefore, I can only say that I fail to see how we can hook the stones into the situation very well. It does not

strike me that this was a metabolic problem such as we might get with disease of the parathyroid gland and renal calculi. Therefore, although I may come back to it, I shall let this stone lie where it is, temporarily, without making very much ado about it.

The possibility of acute glomerulonephritis or an acute relapse exacerbation of a chronic glomerulonephritis in a woman of this age strikes me, just as it struck Mr. Spooner and his colleagues, as the likeliest explanation for this woman's difficulty. Since we do not have many of the facts from her past history that we might want, and if we take at face value the statement that she had indeed been well all of her life—a rather miraculous state—this is still the best bet. Chronic glomerulonephritis may go completely unrecognized until it produces the uremia. It may be recognized only in consequence of an acute relapse, or it may adopt any of the various introductory masquerades under which uremia can first make its presence known.

The possibility of pyelonephritis is not so good, but it cannot be excluded on the basis of the evidence we possess. A stone would be more likely to be found in pyelonephritis, although I should regard that as inconclusive in itself.

A possibility that one has to make out of whole cloth, if he takes the history at face value, is that perhaps she had been harboring a peptic ulcer, had been dosing herself with soda, milk and cream, and had developed the milk-alkali syndrome, with renal calculi that can occupy most of the renal pelvis. If I tried to convince you that this was a likely probability, having had to invent the whole story of a peptic ulcer and its treatment, you would say that I had crept out upon a long and slender limb. I do not think she had it, but I wanted to get it into the record, just in case she did.

I have mentioned glomerulonephritis. It is the likeliest diagnosis. Because of the fulminating course, I suggest the possibility that the patient's disease was an exacerbation of a chronic or a subacute glomerulonephritis, rather than an initial attack occurring in a woman of 73, though such a thing is certainly possible. I have mentioned pyelonephritis, and it is a possibility second only to glomerulonephritis. Sensitivity angiitis should also be mentioned. There is a remote possibility of a Wegner's granulomatosis, but I think it can be excluded on the basis of the meager roentgen findings in the chest.

What is the significance of the sudden death which carried this woman off after a convulsion? Is there any possibility that some accident connected with dialysis could have produced it? This is not the way in which people generally die with a cerebral hemorrhage or a stroke. Immediate death may occur with a massive explosive hemor-

rhage and convulsion, but it is uncommon. Ordinarily, victims cry out with a headache or call attention to intense sudden pain; focal signs may occur and last till just before total paralysis and death. This is not the way one usually dies with a myocardial infarct. Is there any way in which, by some most unhappy error, an air embolus could have occurred? This again is very unlikely, because even if the catheter were prodded into the peritoneum, and air got into the mesenteric system, it would have to go through the liver and most of the bubbles would have been blocked out there. It would then have to go through the lung, which would remove most of the rest of them. It is most unlikely, then, that an air embolism occurred. Thus I do not see how one can connect the dialysis with her death. I imagine she will have some edema of the brain. She will probably have had some vascular disease, but I shall be surprised if a gross organic lesion tells us why she died 30 minutes after that dialysis began, rather than on the next Tuesday.

Dr. Sheets: Are there any comments or questions? *Dr. Flocks,* can you think of anything else that should be considered in this patient?

Dr. R. H. Flocks, Urology: I believe the discussions were excellent.

Dr. Bean: What do you mean by saying merely that you "believe"?

Dr. Flocks: They were excellent. I just would like to make one comment and then ask *Dr. Bean* a question. Ordinarily, calcification in the kidney is evidence of a past attack of pyelonephritis, with repair. Therefore, the presence of the two areas of calcification would mean that the patient had experienced an attack of pyelonephritis. How often do you see renal artery sclerosis with calcified plaques and then, suddenly or fairly suddenly, bilateral occlusion? Could this have been a progressive, fairly rapid renal occlusion?

Dr. Bean: As for how often I see it, I don't recall ever having seen this happen. I can't recall that I have ever seen roentgen shadows of calcium localized in the renal arteries on both sides and then the syndrome of bilateral occlusion. The fact that both attempts at catheterization failed to produce any urine may indicate that there was a thrombus or bilateral thrombi in the two renal arteries. On the other hand, the simultaneous occurrence of two thrombi or the occurrence of one very shortly after the other would be extremely unusual, in the absence of any gross aberration in the circulation of the lower extremities. Occasionally, one gets a most exotic form of dissecting renal-artery lesion. I have seen one example of this where one renal artery was totally shut down by a dissection that was not more than two inches long and did not go all the way around the circumference of the aorta, but selectively pinched off the one renal artery. Renal-

vein thrombosis presents an entirely different picture, in which the nephrotic syndrome is the characteristic feature. The notion that this might have been a bilateral but independent thrombus of the renal artery is a brilliant suggestion. I do not think it's right, but I think it would explain everything that happened.

Dr. Flocks: Did we visualize the other side? Do we know that she had a right kidney?

Dr. Bean: One was done here, the other at another hospital.

Dr. Van Epps: I would state categorically that there was no renal artery or vein thrombosis at the time of this examination.

Dr. Walter M. Kirkendall, Internal Medicine: You've been missing quite a number of cases of renal-vein thrombosis.

Dr. Van Epps: I was not aware we were missing a lot of renal-vein thromboses. I know that we have made the correct diagnosis in two or three cases.

Dr. Henry Hamilton, Internal Medicine: This patient had a very high sedimentation rate. What were the proteins?

Dr. Sheets: The proteins are not recorded in the chart.

Dr. Hamilton: Was this a deliberate omission?

Dr. Sheets: No, they're not in the chart. They weren't done.

Dr. Ian Smith, Internal Medicine: Was there any suggestion of streptococcal infections in the family, other than in the patient?

Dr. Sheets: We have no more information on that. There is no information as to the antibiotics or any more specific information.

Dr. Hamilton: I wanted to know about the proteins, for multiple myeloma or amyloidosis may terminate in uremia without an elevation in blood pressure.

Student: How did you rule out acute tubular necrosis, Dr. Bean?

Dr. Bean: I did not even think about it. I think it is very unlikely. There was nothing in the way of the crush syndrome or anything of that kind. The story seems to be much more consistent with the other diagnosis.

Dr. Carl Anderson, Internal Medicine: Dialysis could be related to this woman's sudden death. In a patient who has been digitalized and also has a high serum potassium, dialysis will remove the potassium from the serum, but not the digitalis. This has been associated with a severe sudden digitalis-induced arrhythmia. I admit that this is not very likely to happen in so short a time, but it is a possible explanation.

Dr. Bean: That is an interesting suggestion, but I should point out that if this woman died of digitalis poisoning in 30 minutes, her death has set a new record for speed. It seems unlikely to me that we could have washed away potassium fast

enough to ruin her. Digitalis intoxication is certainly a very curious clinical puzzle and may masquerade in many varieties and situations, but generally we are confused in the onset of congestive failure. Is there too much or too little digitalis? I don't deny that this might be the explanation.

Dr. Jack M. Layton, Pathology: At necropsy, the principal findings were related to the kidneys. Both kidneys were enlarged, their combined weights being 385 grams. Each had a finely granular surface which bulged when the capsule was incised. The cortical markings were prominent, and petechiae were noted through both cortex and medulla. The glomeruli were hypercellular, with proliferation of capsular epithelium that formed crescents as well as endothelial proliferation in the tufts. Considerable fibrinoid necrosis was present in the axial framework of the glomeruli. The tubules disclosed varying degrees of hypertrophy and atrophy, with extensive epithelial cell dissociation, casts of all types in the lumina and increased fibrous tissue in the interstitium, as well as active inflammation widely distributed throughout the parenchyma. There was mild pyelitis, but no calculi were observed in the urinary tract. A 1 cm. reddish-black inflammatory polyp was noted in the urinary bladder just posterior to the trigone.

The heart was enlarged, particularly the left ventricle. The pericardial cavity was obliterated by tough, whitish-gray fibrous adhesions. There was extensive fatty stromal infiltration of the heart. A few tiny focal extravasations of blood were noted in the myocardium. The lungs disclosed dependent congestion and edema, with frothy fluid expressed from the surfaces, particularly in the bases. There was intense acute congestion, with scattered foci of recent hemorrhage. In each pleural cavity there was 450 ml. of transparent straw-colored fluid. The peritoneum was smooth and shiny, without evidence of inflammation.

The adrenals displayed cortical hyperplasia, especially in the zona glomerulosa. The thyroid gland showed evidence of chronic thyroiditis of the focal lymphoid hyperplasia type. Atrophic polyps involved the endometrium.

There was intense hyperemia throughout the digestive tract. Adiposity was extensive in the pancreas, and mild patchy dilatation of pancreatic acini had occurred. This was a case of acute glomerulonephritis with renal failure, and the immediate cause of death was probably related to an electrolyte intoxication.

There were no renal stones. Apparently someone came down and inquired about them vigorously, for the prosector mentioned three times, in the description of the kidneys, that there were

no stones. Dr. Van Epps, do you have an alternative explanation for those shadows?

Dr. Van Epps: Can we look at Figure 1 again? All I can say is that there are shadows of calcific density in the renal areas, and on the left where the ureteral catheter has been introduced into the pelvis—on *your* left, that is. We have this in only one plane, I grant. It is customary when one is attempting to localize a shadow, particularly in the pelvis, to determine whether it is a phlebolith or not, and to rotate the patient a bit. If this shadow stays in contact with a catheter, then it must be a calculus at the same level. We are always dealing with densities. Perhaps the shadow represents an area of calcific density in the pancreas. This is not the usual distribution of pancreatic calculi.

Dr. Gillies has had more experience in this area than I have. What do you think, Dr. Gillies, about the possibility of those densities?

Dr. Carl Gillies, Radiology: It is in an area that could be pancreas. To me, however, they look like renal calculi.

Dr. Van Epps: We're still in the same boat. We think it most likely that they represent renal calculi, but I have no explanation for them because they are not in the form, size or density of vascular calcification, and mesenteric calcifications usually are not in this area. They are much lower down and have a different configuration. I am at a loss to explain them.

Dr. Bean: Maybe she passed them with the terminal convulsion.

Dr. Van Epps: Perhaps the catheter helped move one of them. I don't know, Dr. Layton, how to explain them.

Dr. Sheets: Dr. Kirkendall, do you think this patient should have been dialyzed?

Dr. Kirkendall: Yes. We think any patient who has a chance for survival should be dialyzed. This is an area where new technics to help patients in surviving are introduced almost daily. If we know a patient has acute glomerulonephritis, we think that he should have the benefit of dialysis until we feel reasonably sure, on the basis of his clinical course or on the basis of histologic evidence, that he cannot survive, or until his death, perhaps from an intercurrent infection. There is no question that, in time to come, patients of this type may be subjected to a homograft. We certainly try to carry them over the period of acute uremia so that they can be adequately prepared for such a major surgical procedure.

Dr. Flocks: I want to make just one statement. In a recent discussion on renal transplantation in St. Louis, Dr. Harrison made an interesting comment about two patients who had received homografts from twins, who had gone several years without any difficulties, and in whom the initial

transplantations had been no problem and the initial disease had been glomerulonephritis. The recipient patients developed glomerulonephritis in the transplanted kidney, although their respective twins who had given the kidneys never had had glomerulonephritis and were still alive and well. The recipients then died of glomerulonephritis in the transplanted kidney. He made the statement that we probably need to learn a lot more about glomerulonephritis.

Dr. Sheets: Dr. Mason, would you like to comment about this patient?

Dr. E. E. Mason, Surgery: We do not usually dialyze patients who have chronic renal disease, for we feel we are not prepared to keep people alive without kidneys. The fact that we dialyzed this patient suggests that none of us were sure about the diagnosis. Another indication of our uncertainty is that we waited eight days between the dialyses. If we are really sure about the diagnosis and think we can save the patient, or if we wish to prolong his life even though we know he has chronic renal failure, then we usually dialyze fairly frequently at first, to get the patient really clean chemically.

About the convulsions: Convulsions do occur in uremia, and it may be just coincidence that a convulsion occurred 30 minutes after we started the dialysis. However, there is some evidence that urea moves out of the extracellular fluid and out of the blood much faster than it moves out of the cells. As a result, there is a relative decrease in osmotic pressure in the extracellular fluid, and that decrease exceeds the decrease in osmotic pressure in the intracellular fluid. In other words, we remove solutes from outside of the cells faster than we remove solutes from inside the cells. The excessive solute in the cells then pulls water in, with a resultant acute stretching of the cells. This is probably the reason why we see convulsions occasionally during dialysis, and in consequence when the patient gets a little bit twitchy, we usually administer barbiturates.

I think we should keep this explanation in mind when we consider the advantages and disadvantages of extracorporeal and peritoneal dialysis. Extracorporeal dialysis is much more efficient; as a matter of fact, it may occasionally be too efficient. If you use peritoneal dialysis and do it a little more slowly, the patient is not so likely to convulse. Also the extracorporeal dialysis unit is primed with about 800 cc. of blood, and there can be some shift of blood volume either into the machine or into the patient, and if the patient was just barely compensated with the diseased myocardium, it is conceivable that a little shift in blood volume may tip the scales, and as a result produce a sudden acute cardiac failure.

NECROPSY FINDINGS

ANATOMICAL DIAGNOSES

Acute glomerulonephritis
Pulmonary edema, focal hemorrhage, and patchy fibrosis
Cardiac hypertrophy, with extensive stromal fatty infiltration
Chronic pericarditis, obliterative, old
Congestion of viscera
Cortical hyperplasia, adrenal glands
Chronic cystitis
Chronic thyroiditis, focal lymphoid hyperplasia type
Endometrial polyps
Recto-sigmoid diverticula
Hydrothorax, bilateral

STUDENT'S DIAGNOSES

Acute glomerulonephritis resulting in acute renal failure
Other possible causes of renal failure:
Chronic pyelonephritis
Drug reaction
Bilateral renal-vein thrombosis
Collagen vascular disease
Convulsions due to intracranial hemorrhage or electrolyte imbalance

DR. BEAN'S DIAGNOSES

Subacute or chronic glomerulonephritis with exacerbation
Also to be considered:
Pyelonephritis
Sensitivity angiitis
Convulsions due to cerebral edema



At the luncheon session of the Fall Conference, Dr. S. P. Leinbach, chairman of the IMS Board of Trustees, presented Mr. Robert B. Throckmorton, former IMS Legal Counsel and now General Counsel to the AMA, with a token expression of IMS appreciation. It is a marble paperweight, plated with silver, and inscribed with the emblem of IMS and "In grateful appreciation to Robert B. Throckmorton, 1963." A citation was also given to Mr. Throckmorton, thanking him for his outstanding service and devotion to the Society.



THE PHYSICIAN AS A HUMANITARIAN

In an idealistic and thought-provoking article entitled "The Compleat Physician," A. R. Gilbert, M.D., a Scottish-doctor, has declared, "For both clinicians and patient, science will always have its limitations. The doctor must be demonstrably more than a dessicated calculating machine. Though science is dominant at this time, the personal qualities of the physician count just as much if not more than ever before."

In the training of doctors, he goes on to say, emphasis is given to the acquisition of scientific knowledge, and the instilling of attributes which are highly regarded by the educated layman is relatively neglected. There is disproportionate stress on the acquisition of facts and figures; and the methods of scientific thought, the value of reason and relevant experiments do not receive sufficient attention.

In medicine, where the subject for study is man himself, he insists that the student should possess the highest ethical standards at the outset, and should be imbued with a sense of personal responsibility and encouraged to show a warm-hearted humanity. The gifted doctor is one who inspires confidence under the most difficult circumstances. The art of medicine, this author thinks, consists of the tactics best suited for the particular clinical situation. Its essential ingredients are knowledge, judgment, sympathy and the ability to anticipate the reactions of the patient.

According to Dr. Gilbert, the art of the doctor is something peculiar to him as an individual—as characteristic as his handwriting, his footstep or his spoken word. It reflects his outlook, his upbringing, his training, his life with the sick, and most of all his personal character. The art of the physician can attract, repel, inspire or discourage; it can make or mar. Behavior beyond reproach is the ideal he must set for himself. Dr. Gilbert declares that character is the driving force, and that it is guided toward its objectives by intelligence. Together, they sum up the human mind and are inseparable from it.

A group of 1,400 schoolmasters, he reports, were

recently asked what qualities they considered important in a young man intending to become a doctor. The replies to this inquiry listed loyalty, perseverance, poise, conscientiousness, resourcefulness, sympathy, patience, compassion, gentleness and imagination. Obviously the layman expects the physician to be a paragon. Few individuals, layman or physician, are endowed with such attributes.

There is a need for courses in the art of medicine, and it would appear that the need is as great in this country as it is in Britain. Science and art are not incompatible; indeed they should be complementary. The practice of medicine requires not only science—an intellectual discipline—but also the patience and practical skill of an art.

CHANGING PATTERNS OF INFECTIOUS DISEASES

The United States Public Health Service provides barriers against the introduction of epidemic infections into this country, but it is nevertheless important that everyone concerned with the health of the American people keep in mind that serious epidemics have occurred in the past, and that each of us has a responsibility in preventing their repetition. Modern transportation is so rapid that an infection can be carried from Pakistan or from Madagascar or from Hong Kong to Midwestern United States in a mere matter of hours!

In a recent discussion of this problem, Dr. Chester S. Keefer* reviewed the influenza pandemic of 1918. It, he said, was the worst epidemic in the history of the world, for 525,000,000 people throughout the earth developed the disease, and 20,000,000 of them died. In August, 1918, within six weeks after the disease entered this country, from 20 to 40 per cent of our people had contracted it, and from 5 to 10 per cent developed pneumonia. A total of 500,000 Americans, or one in every 200 in the population, died.

The infection—the so-called Spanish influenza—was caused by a variant or mutant of what is now recognized as one of the influenza viruses, the disease is cyclic, and it occurs with regularity every three years. From cycle to cycle, it is frequently due to different variants of the virus. The complicating pneumonia, in 1918, was caused by the hemolytic streptococcus, the pneumococcus and the influenza bacillus.

In the epidemics of 1957-1958 and of 1961-1962, health authorities were better prepared, and through the World Health Organization they were warned well in advance of the spread of the disease. In 1957-1958 it was estimated that at least 25 per cent of the population in this country had

* Gilbert, A. R.: Compleat physician. LANCET, 2:1-4 (July 6) 1963.

* Keefer, C. S.: Changing patterns of infectious diseases. PHILADELPHIA MEDICINE, 59:571-577, (May 17) 1963.

Editorials continued...

the disease, but the mortality was relatively low. In 1961-1962 an epidemic of influenza-B occurred which produced an increase in mortality from respiratory disease. Preexisting cardiopulmonary disease contributed to the mortality, and many deaths occurred in the elderly and the debilitated.

During the 1957-1958 epidemic, a monovalent vaccine was produced which proved safe and effective. The minimum time required for the development of immunity was from 10 days to two weeks. The effectiveness varied from 50 to 75 per cent, depending upon the dosage and upon the relationship between the time of vaccination and the time of the outbreak of the disease.

It is important that everyone concerned with the public health to be alert to the serious possibilities of periodic epidemics of influenza. Warnings by WHO and the USPHS must be taken seriously, and susceptible individuals should be protected by appropriate vaccination. The pandemic of 1918, during which there were 20,000,000 deaths throughout the world, must not be forgotten. Health authorities in every nation must make a serious cooperative effort if epidemics are to be controlled and confined.

SPLENECTOMY

A report on experience with nearly 1,000 splenectomies from the Department of Surgery of the Ohio State University Medical Center* is a valuable contribution which should be of great interest to the clinician and surgeon. During the past 16 years, 972 splenectomies have been performed at University Hospital, Columbus, Ohio. The indications for splenectomy in those patients were as follows:

Hypersplenism	636
Incidental to other surgery	205
Portal hypertension	54
Trauma	65
Symptomatic	12
	972

Hypersplenism was the indication in almost two-thirds of the cases. This group included those patients in whom the spleen was considered partially or wholly responsible for depression of the cellular elements of the peripheral blood. Hypersplenism denotes an overactivity of the spleen in which one or more of the formed elements of the peripheral blood are decreased. The precise mechanisms involved are controversial, how-

ever. Splenic phagocytosis and autoimmune factors due at least in part to the spleen or to splenic humoral influences affecting the bone marrow may cause the reduction of the cellular elements in the blood.

Patients with hypersplenism have been divided into two major groups—those with primary and those with secondary hypersplenism. Primary hypersplenism includes essential thrombocytopenic purpura, congenital hemolytic anemia, primary splenic neutropenia and pancytopenia. Secondary hypersplenism includes cases in which the spleen is thought to have been a significant cause of cytopenia occurring in the course of a chronic systemic disease. The cases of hypersplenism and secondary hypersplenism in the Ohio State group are listed as follows:

HYPERSPLENISM

Idiopathic thrombocytopenic purpura ..	206
Congenital hemolytic anemia	91
Primary splenic neutropenia	21
Primary splenic pancytopenia	20
Secondary thrombocytopenic purpura ..	35
Secondary hemolytic anemia	86
Secondary splenic neutropenia	41
Secondary splenic pancytopenia	59
Acquired hemolytic anemia	59
Felty's syndrome	18
	636

SECONDARY HYPERSPLENISM

Leukemia	55
Banti's disease	36
Infections	18
Boeck's sarcoid	13
Hodgkin's disease	26
Gaucher's disease	4
Acquired hemolytic anemia	59
Felty's syndrome	13
Sarcomas	18
Other	56
	298

The author, Dr. Roger D. Williams, gives credit to the O.S.U. Department of Hematology for the proper diagnosis of this group of patients, and attributes the fortunate results of surgery in great measure to the efforts of the clinicians. Among patients with primary hypersplenism, the mortality rate was 2.3 per cent. Most of those patients were young, the average age being in the low twenties, they had few associated diseases, and the surgical risks were small. In contrast with the excellent results of splenectomy in primary hypersplenism patients, the mortality rate in the secondary hypersplenism group was 11.7 per cent. Over 90 per cent of these latter had a debilitating

* Williams, R. D.: Surgical indications and results of splenectomy. RHODE ISLAND MED. J., 46:420-423, (Aug.) 1963.

disease, two-thirds had a severe anemia, and they were considered poor surgical risks.

There were no deaths in the group of 91 patients operated upon for congenital hemolytic anemia. The hemolytic process invariably ceased following splenectomy. The results were not so good in patients in whom the hemolytic anemia was secondary and in those with acquired hemolytic anemia. In only 53 per cent of these were the results considered satisfactory, and there was a mortality rate of 5.5 per cent. According to the Ohio surgeons, despite moderate to severe anemia and with limited transfusions, surgery can be safely performed on this group of patients if a high-oxygen anesthetic mixture is used and if transfusions are done immediately after ligation of the splenic artery.

Patients with thrombocytopenic purpura with generalized purpura, gingival bleeding and very low platelet counts presented the most challenging problems to the surgeon. Better results were achieved in the idiopathic form than in secondary thrombocytopenic purpura. The hazard of initiating severe hemorrhage from nasogastric or tracheal intubation is emphasized.

The use of steroids and the transfusion of fresh whole blood have been greatly beneficial, but have not reduced the need for surgery. Since 1955, the use of steroids has reduced the numbers of patients admitted to surgery with platelet counts under 10,000/cu. mm. from 44 per cent to 2.8 per cent. The incidence of cerebral hemorrhage decreased from 5.0 to 3.9 per cent. Despite the use of steroids, however, the number of splenectomies required has not changed.

Dr. Williams points out the importance of differentiating between primary idiopathic and secondary thrombocytopenic purpura when one is to use steroids in managing the patient. Individuals with secondary thrombocytopenia may have a permanent remission, but in those with the idiopathic form, the disease is apt to recur upon cessation of steroid therapy. One in four patients, in the Ohio group, responded to steroids alone, but four out of five responded to splenectomy alone. When splenectomy was done after steroid therapy, nine out of 10 patients had good platelet responses. Forty per cent of those who required splenectomy had been failures on steroid therapy.

In the Ohio experience during the past 12 years, ACTH or steroids have been used in approximately 40 per cent of the patients with hypersplenism. The number of splenectomies required annually continued about the same, despite the use of steroids. These medications increased the postoperative complications of infection, and delayed wound healing, but they were advantageous in that they improved the surgical risk by producing higher platelet counts and preventing cen-

tral nervous system hemorrhage in some instances. Steroids and splenectomy, used together, may give results unobtainable with either one of them alone. It was found that steroids were particularly valuable in those forms of hemolytic and thrombocytopenic hypersplenism in which antioimmune factors play a significant role.

The part which the spleen plays in cases of hypersplenism with neutropenia and pancytopenia is difficult to determine. New studies with radioactive tracers may indicate which cases will respond to splenectomy. Those patients in whom there was a good marrow response and in whom the spleen was considered to be the cause of the cytopenia had satisfactory results from splenectomy.

In secondary hypersplenism, a meticulous hematologic evaluation is necessary and may give some clue to the outcome of splenectomy. The risk in conditions of this sort may be great.

Splenectomy was incidental to other surgery in 102 patients with malignancy of the stomach, pancreas or lower esophagus, and in 86 patients with benign lesions of the stomach or pancreas. In 17 patients, the splenic capsule had been torn during the abdominal operation, and splenectomy was considered the safest measure to control hemorrhage. The mortality rate in the group of patients subjected to incidental splenectomy was 15.1 per cent.

Sixty-five patients were operated upon because of traumatic rupture of the spleen. Nearly half of them had one or more associated injuries, and these contributed to the high morbidity and mortality. This group had a death rate of 15 per cent. The associated injuries were usually to the head, to the chest, or to other intra-abdominal organs. Delayed splenic hemorrhage occurred in five patients with splenic injury.

Fifty-four patients with portal hypertension had splenectomy in addition to various types of venous shunt. Of this group, 78 per cent had hypersplenism. Two-thirds had thrombocytopenia, two-thirds had neutropenia, and one-third had pancytopenia. The mortality rate in this group was 9.2 per cent.

According to the author, the technic of splenectomy must be meticulous, and careful hemostasis is essential. A carefully planned technic consists of early ligation of the splenic artery, individual division and ligation of the vena brevia, and double ligation of the arteries and veins of the splenic pedicle.

Dr. Williams concludes that the results of surgery depend primarily upon the accuracy of the hematologic diagnosis. The mortality varies with the indications for splenectomy. Careful attention to details in diagnosis, careful preoperative preparation and meticulous technic are essential if good results are to be obtained.

TETRACYCLINE TOXICITY*

A recent leading article in *THE LANCET* sums up present knowledge concerning the toxicity of the tetracycline group of drugs. It should prompt physicians to reassess their use of them in the treatment of infections, particularly in infants and children and in pregnant women.

In 1957 and 1958, it was demonstrated that the tetracyclines are deposited in the long bones and in the deciduous teeth of infants. Except for discoloration of the enamel, the significance of these deposits was not understood at that time. Subsequent studies have shown that in patients receiving tetracyclines over considerable periods of time there is discoloration of fingernails and toenails in all cases, and it has also been demonstrated that when pregnant women have been given therapeutic doses, their babies can be expected to have discolored teeth. Inasmuch as the infants studied had not been breast fed, it was concluded that the drug passed the placental barrier. Studies in animals and in other human patients have shown that the drug passes the placenta readily, and that it interferes considerably with skeletal growth. When given to mothers in the last trimester of pregnancy, tetracyclines were deposited throughout the fetal skeleton. X-ray examination showed an inhibition of fibular growth during the time when the drug was given to premature infants. The retardation of bone growth was attributed directly to the deposit of the drug and not to a suppression of the intestinal flora.

The *LANCET* article says: "It has therefore been proved beyond any doubt that any of the tetracycline drugs, given in therapeutic doses, interferes immediately with the growth and development of bones and teeth in infants. As to possible teratogenicity, the evidence is inconclusive."

In addition to the toxic effects on teeth and bone, attention is called to the fact that tetracyclines deteriorate on storage from a yellow powder to a brown gum. The degradation products have been shown to cause an acute condition similar to the adult type of Fanconi syndrome. This toxic reaction starts within two or three days after administration begins, but fortunately in the six cases thus far reported, the toxic effects have been reversible. The reaction is characterized by nausea and vomiting, proteinuria, glycosuria, acidosis and amino-aciduria.

The article concludes with the statement that though the tetracyclines have been widely and beneficially used for over 10 years, it is now necessary to revise some well-established therapeutic rules regarding them. The evidences of toxicity indicate that tetracyclines should not be given to pregnant women or to infants unless no other drug can control the infection. It is urged that the drugs should not be given for trivial in-

fections, particularly in children. There have been numerous reports of increasing resistance to this group of drugs by pneumococci and streptococci. Their prolonged use in chronic infections such as chronic bronchitis must be weighed carefully.

WATCH FOR YOUR COPY OF THE NEW HANDBOOK

After numerous and prolonged delays and postponements, the new edition of the *IMS HANDBOOK OF RESOURCES AVAILABLE TO PHYSICIANS* should reach you within a few days, one way or the other, of the time when this issue of the *JOURNAL* is distributed. Please tell your secretary that it is something which both you and she should examine carefully, and should keep readily accessible.

Like its predecessor, the first edition which was published in 1954, the new *HANDBOOK* should help you (1) to make more complete use of the private and public agencies that do health and social work; (2) to answer the questions that your patients ask regarding subjects that are not strictly medical; and (3) to cooperate fully with the State Department of Health, the S.U.I. College of Medicine and other governmental agencies.

For your secretary and your office nurse—regardless of how long they may have worked with you—it can serve as a text for in-service training. Besides providing them a great deal of essential information in an outline form that makes data easy to find, it will help them to a better understanding of your place in your community and your relationships with various branches of government.

The book is sure to be useful to many people outside of medicine, and some of them may ask you how they can secure copies. The *IMS* is happy to sell them at \$3 each, but of course you receive your copy as one of the perquisites of *IMS* membership.

The day which is set aside for thoughtful Americans to express gratitude for their many blessings is near at hand. It is also a time for organizations to reflect and to give recognition to those individuals who have made extraordinary contributions in their interest.

It is particularly appropriate at this time to pay tribute to Edward W. Hamilton, the managing editor of this, the *IOWA MEDICAL JOURNAL*, and to express the gratitude of the membership for his dedicated effort in behalf of the Society and of the *JOURNAL*. May he know that his unusual qualifications, high standards and conscientious effort are appreciated by the physicians of Iowa. It is our hope that this knowledge may make this a significant Thanksgiving Day for him and his family. It is a privilege and an inspiration to be associated with him on the staff of the *JOURNAL*.

DENNIS H. KELLY, M.D.

* Tetracycline toxicity. *LANCET*, 2:283-284, (Aug. 10) 1963.

President's Page



All but one of the area meetings on IMS-Blue Shield relations and IMS projects have now been held. At some of them the attendance was excellent, and the exchanges of information and ideas were altogether satisfactory. At some of the others, however, too few doctors were present, and the apathy about which I have frequently protested was quite obvious.

If for any reason you are one of the doctors who didn't attend one of those meetings, and particularly if no representative from your county medical society was present, I want to urge you to study the copy of the Supplemental Report of the Policy Evaluation Committee which was sent to you with your invitation to your area meeting. (You can find it in the April issue of the *JOURNAL* or, along with Supplementary Report "D" of the Board of Trustees and the Report of the Reference Committee on Insurance and Medical Service, among the committee reports in the July issue, if you no longer can locate the reprint.) It still isn't too late for you to convey your attitude and/or that of your county society to the Policy Evaluation Committee for its consideration when it formulates specific proposals for the House of Delegates.

Recommendations from the Policy Evaluation Committee to the 1964 meeting of the House of Delegates, concerning the "Blue Chip" policy and the income limits in other Blue Shield policies, are scheduled to appear in the March, 1964, issue of the *JOURNAL*. Your county medical society will want to study those recommendations carefully, and quite possibly it will want to submit a resolution concerning them. In any event, you and your colleagues will want to tell your delegate or delegates how you want them to vote on them.

C. W. Edwards, Sr.

President

Coming Meetings

IN STATE

- Nov. 6-7 **Nursing Institute on Labor and Delivery Room Problems.** S.U.I., Iowa City.
- Nov. 7 **Iowa Dietetic Association, Y.M.C.A.,** Des Moines.
- Dec. 1-3 **Association for Research in Ophthalmology,** Iowa City.
- Dec. 3-4 **Surgery, S.U.I. College of Medicine,** Iowa City.
- Dec. 6 **Cardiac and Respiratory Disease Conference,** S.U.I. College of Medicine, Iowa City.

CONTINENTAL U. S.

- Nov. 1-2 **Central Society of Clinical Research,** Drake Hotel, Chicago.
- Nov. 2-3 **14th National County Medical Societies Conference on Disaster Medical Care,** Pick-Congress Hotel, Chicago.
- Nov. 2-6 **American Orthotics and Prosthetics Association,** Jung Hotel, New Orleans.
- Nov. 2-6 **American Society of Anesthesiologists,** Palmer House, Chicago.
- Nov. 5-8 **American Association of Blood Banks,** Statler-Hilton Hotel, Detroit
- Nov. 6-7 **A. Morris Ginsberg Memorial Seminar in Neurology (University of Kansas School of Medicine).** Menorah Medical Center, Kansas City, Missouri.
- Nov. 7-9 **American Society of Cytology,** Neil House, Columbus, Ohio.
- Nov. 7-10 **Gerontological Society,** Sheraton Plaza Hotel, Boston.
- Nov. 10-15 **American Fracture Association,** Americana Hotel, Bal Harbour, Florida.
- Nov. 11-14 **Internal Medicine,** University of Kansas Medical Center, Kansas City, Kansas.
- Nov. 11-15 **American College of Preventive Medicine,** Continental Hotel and Municipal Auditorium, Kansas City, Missouri.
- Nov. 11-15 **American Public Health Association,** Municipal Auditorium, Kansas City, Missouri.
- Nov. 11-15 **Recent Advances in the Diagnosis and Treatment of Diseases of the Heart and Lungs (American College of Chest Physicians),** Barbizon Plaza Hotel, New York City.
- Nov. 13-16 **American Medical Women's Association,** St. Anthony Hotel, San Antonio.
- Nov. 14-16 **Southwestern Medical Association,** Holiday Inn, El Paso.
- Nov. 15 **Seventh Annual Symposium on Diabetes,** Presbyterian-St. Lukes Hospital, Chicago.
- Nov. 17-22 **Radiological Society of North America,** Palmer House, Chicago.
- Nov. 18-20 **Aging of the Lung: Perspectives, Tenth Hahnemann Symposium,** Hahnemann Medical College and Hospital, Sheraton Hotel, Philadelphia.
- Nov. 18-21 **Southern Medical Association,** New Orleans.
- Nov. 20-23 **American College of Obstetricians and Gynecologists (District 6),** Schroeder Hotel, Milwaukee.
- Nov. 21-22 **American College of Physicians (first midwest sectional),** Detroit.
- Nov. 21-23 **Western Surgical Association,** Galvez Hotel, Galveston, Texas.
- Nov. 21-23 **Sectional Meeting of the American College of Physicians,** Detroit.
- Nov. 24-27 **American Academy for Cerebral Palsy,** Dallas-Sheraton Hotel, Dallas.
- Nov. 30-Dec. 1 **Interim Session, American College of Chest Physicians,** Portland.
- Nov. 30-Dec. 5 **American Academy of Dermatology,** Palmer Fouse, Chicago.

- Dec. 1-4 **American Medical Association (Clinical Meeting),** Portland Hilton Hotel and Memorial Coliseum, Portland.
- Dec. 2-6 **Advances in the Medical Aspects of Cancer,** Francis Delafield Hospital, New York, New York.
- Dec. 2-6 **Psychiatry for the Internist,** Los Angeles County General Hospital, Los Angeles.
- Dec. 2-6 **Recent Advances in the Diagnosis and Treatment of Diseases of the Heart and Lungs,** Ambassador Hotel, Los Angeles.
- Dec. 6-7 **Association for Research in Nervous and Mental Diseases,** Roosevelt Hotel, New York City.
- Dec. 6-7 **American Rheumatism Association (interim session),** Boston.
- Dec. 6-7 **Progress in Cancer Detection and Treatment,** University of Nebraska College of Medicine, Omaha.
- Dec. 6-8 **American Psychoanalytic Association,** Commodore Hotel, New York City.
- Dec. 7-8 **International Symposium on Hemophilia,** Sheraton-Park Hotel, Washington, D. C.
- Dec. 9-10 **American Society of Hematology,** Statler Hotel, Washington, D. C.
- Dec. 9-13 **Environmental Medicine,** Massachusetts General Hospital, Boston.
- Dec. 10-12 **Southern Surgical Association,** Homestead, Hot Springs, Virginia.
- Dec. 14-15 **Academy of Psychoanalysis,** Commodore Hotel, New York City.
- Dec. 26-30 **American Association for the Advancement of Science,** Cleveland Hotel, Cleveland.
- Dec. 27-30 **International Convention of Missionary Medicine,** Wheaton, Illinois.

ABROAD

- Nov. 5-13 **Ninth Congress of the Pan-Pacific Surgical Association.** Honolulu. Write: F. J. Pinkerton, M.D., Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13, Hawaii
- Nov. 8-10 **International Conference on Tetanus,** Bombay. Info: J. C. Patel, M.D., KEH Hospital, Parel, Bombay 12.
- Nov. 13-Dec. 10 **First Pan-Pacific Mobile Educational Lecture Seminar.** New Zealand, Australia, Thailand, the Philippines, Hong Kong and Japan. Write Dr. F. J. Pinkerton, Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13
- Nov. 18-27 **Conference of Deans of Medical Schools,** Manila. Info: World Health Organization, Regional Committee for the Western Pacific, Box 2932, Manila.
- Nov. 24-30 **Ibero-Latin American Congress of Dermatology (fifth),** Buenos Aires, and Mar del Plata, Argentina. Sec.: David Grinspan, Bustamante 2659, Buenos Aires.
- Nov. 26-Dec. 2 **Technical Meeting on Cancer Epidemiological Methodology,** Geneva or Copenhagen. Info: World Health Organization, Palais des Nations, Geneva.
- Dec. 1-7 **Pan American Congress of Pharmacy and Biochemistry,** Mexico. Dir.: George B. Griffenhagen, Division of Communications, American Pharmaceutical Association, 2215 Constitution Ave. NW, Washington 7, D. C.
- Dec. 3-9 **Meetings on Pathological Studies of Atherosclerosis,** Malmo, Sweden. Info: World Health Organization, Palais des Nations, Geneva.
- Dec. 3-9 **Seminar on Immunization in the Control of Communicable Diseases,** Manila. Info: World Health Organization, Regional Committee for the Western Pacific, Box 2932, Manila.

THE JOURNAL *Book Shelf*



BOOK REVIEWS

MAN AND HIS FUTURE, edited by *Gordon Wolstenholme* (Boston, Little, Brown and Company, 1963. \$6.00).

REVIEW OF MEDICAL PHYSIOLOGY, by *William F. Ganong*, M.D. (Los Altos, California, Lange Medical Publications, 1963. \$6.60).

PERSONNEL IN WORLD WAR II, by *Colonel John Boyd Coates, Jr.*, and *Charles M. Wittse* (Washington, D.C., Office of the Surgeon General, Department of the Army, 1963. \$6.00).

DISEASES OF THE SKIN, V EDITION, by *George Clinton Andrews*, M.D. and *Anthony N. Domonkos*, M.D. (Philadelphia, W. B. Saunders Company, 1963. \$16.50).

STRATEGIES OF PSYCHOTHERAPY, by *Jay Haley* (New York, Grune & Stratton, Inc., 1963. \$7.75).

THE PATHOGENESIS OF LEPROSY, by Ciba Foundation Study Group No. 15, Edited by *G. E. W. Wolstenholme* and *Maevae O'Connor* (Boston, Little, Brown and Company, 1963. \$2.95).

BOOKS RECEIVED

APPLIED ANATOMY OF THE EYE, by *Alfred Kestenbaum*, M.D. (New York, Grune & Stratton, 1963. \$12.50).

This book on anatomy diverges somewhat from the customary systematic approach to the subject. The author puts great stress on the application of anatomy to surgical and medical management and draws many parallels to the physiology. This approach makes for interesting reading of a dry subject.

The book can not, however, take the place of other standard text books on anatomy because the author does not go into as much detail as one needs for a complete understanding of the anatomy of the eye.

A valuable factor, that even those well versed in anatomy will appreciate, is that the book stresses the importance of anatomy in clinical practice.—*Henry H. Gurau*, M.D.

GASTROENTEROLOGY, SECOND EDITION, Vol. 1, by *Henry L. Bockus*, M.D. (Philadelphia, W. B. Saunders Company, 1963. \$25.00).

Students of Gastroenterology will welcome the Second Edition of Bockus' classic text on this subject. In the 20 years following publication of the First Edition, the field of Gastroenterology has come of age and many of our present day concepts and techniques have gone far beyond the brief notations (if noted at all)

accorded them in the First Edition. Its value as a comprehensive reference work had been greatly obviated.

The Second Edition has been completely and rewardingly rewritten, new authorities added and each section contains a modern bibliography. Volume I covers the examination of the patient, the esophagus and stomach. The text is printed in double column style and the type is large and legible. The work is profusely illustrated with charts, diagrams and roentgenographic reproductions, all of which are clear and easily understandable. Gastrosopic and esophogoscopic reproductions are in full color.

The volume contains detailed coverage of the diseases of these organ systems. The discussions of the basic physiologic concepts involved in the pathogenesis of each disease state, together with the research studies done to establish the mechanism behind each physiologic concept, are unusually well handled and are not to be skimmed over. The clinician, with a more casual interest in this field, will also find this work of valuable assistance to him.—*Samuel J. Zoeckler*, M.D.

PREVENTIVE MEDICINE IN WORLD WAR II, VOL. VI: COMMUNICABLE DISEASES—MALARIA, prepared and published under the direction of the Surgeon General, (Washington, D. C., Office of the Surgeon General, Department of the Army, 1963. \$6.25).

Malaria has always been the scourge of armies in the field since the beginning of time. Even with all our preventive measures we still had 21,482 American soldiers hospitalized for malaria, as opposed to 17,375 from wounds, between July 9 and September 10, 1943, in the Sicilian Campaign. It was stressed that the Medical Corps alone could never control malaria in a military operation unless the line officers were also "specifically malaria conscious."

The studies of the use of the antimalarial drugs of Sulfamerazine, Atabrine, and Chloroquine were described. The first was discarded, the second used throughout the War and studies on the third continued after the War, in the Philippines and in India.

Among chemical sprays used the most, DDT, of course, stands well out in front as the best known. Anyone reading this volume would receive a detailed knowledge of the administration and organization of the physical set-up used in mosquito control.

This treatise gives an excellent background for all present day studies on malaria control.—*C. Harlan Johnston*, M.D.

Iowa Association of Medical Assistants

Good Grooming

No one likes to think that she is offensive to anybody, but apparently some of us are, at least occasionally, for it is by request that I shall discuss the subject of good grooming.

Neatness and cleanliness are not taboo subjects. Radio and television commercials constantly remind us of the many products available to help us keep attractive, neat and clean. But like good manners, they must be used if they are to be effective. Just our knowing about them doesn't accomplish their purpose.

Let's start our grooming at the very beginning—a clean body from tip to toe. Obviously we can't shampoo daily, but we can bathe or shower once a day, and brushing the hair not only helps keep it clean but stimulates the circulation in the scalp, and gives the hair an "alive" look that is distressingly absent in some of the recent coiffures. After bathing, use an effective deodorant. Change brands occasionally; they sometimes lose their effectiveness.

Next comes clean underclothing. With today's miracle fabrics that drip dry overnight, it is simple and easy to have fresh clothing to put on each morning. (How often we have assisted patients in preparing for examination and noticed their soiled underclothing!) Tattered lace and dingy straps do not contribute to the wearer's sense of well-being. In contrast, snow-white undergarments, even if they are mended rather than new, bolster one's self-respect.

If you wear a uniform in your work, it should always be fresh. A warm iron applied to a "drip dry" garment makes it more attractive, and a bit of spray-starch gives it the added body that makes the difference between merely a clean appearance and a fresh, crisp look. White-under-white is a must! And if your uniform is made of one of the sheerer fabrics, one slip may not be sufficient. Adding a half-slip or substituting one with a double skirt will make your appearance more attractive, especially, if it hangs *just above* the hemline of your uniform.

Let's remember that a uniform represents a profession, and that earrings, a necklace, a colored handkerchief, a gaudy nail polish, and an exotic

perfume do not complement the crisp, white look. Neither does an ultra high-fashion coiffure, or long finger nails that may seem like lethal weapons to a patient.

Fashion and attractiveness dictate the length of the skirt, but whatever its length, the hemline should be even. Beneath it are hose, either white or beige, with straight seams and without runs. To complete the picture, your cap should be well starched, if you wear one, and your white shoes must be spotless, and their laces must be clean and their heels straight.

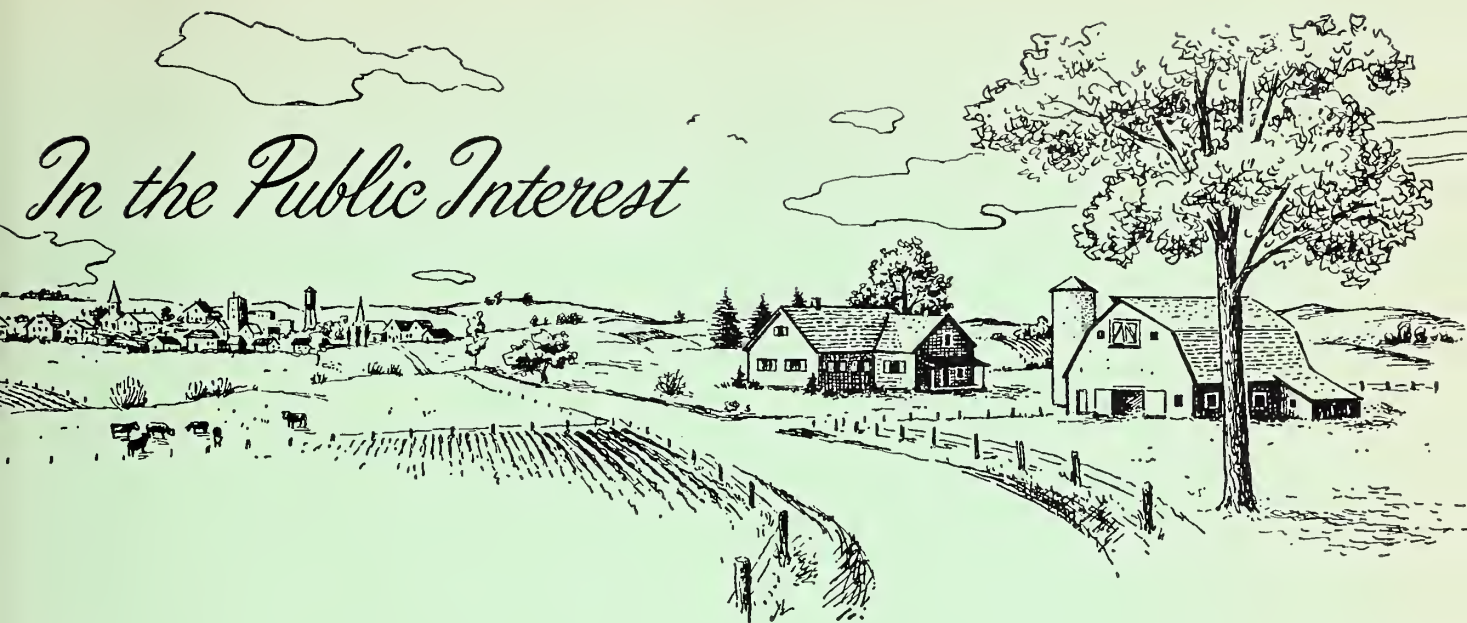
The uniformed medical assistant, of course, is not the only person in your office who needs to be well groomed. If you go to work in street clothes, they too must be clean and fresh. They need not be severely tailored or unflattering, but they must be in good taste. The scoop-necked party dress has no more place in a professional office than have a Sloppy Joe sweater and anklets.

Before retiring at night, prepare your clothing for the next day. Be sure your uniform or dress has all of its buttons or snaps securely fastened in place; that your belt is on the hanger with the garments; that your professional pin, if you wear one, is in its proper place; and that your shoes have been cleaned or shined, and are ready for wear. A few minutes spent before bedtime may save a lot of rushing around in the morning.

If you smoke at work, wash your hands and rinse your mouth with a disinfectant or deodorizing solution afterwards. The smell of tobacco may be offensive to some of the patients or fellow employees with whom you work. Put yourself in their places, and be as thoughtful of them as you would like them to be of you.

You want to be as attractive as possible, to be happy in your work, and to know that you are doing as good a job as you are capable of doing. What better way to be attractive than to be well groomed? A tub or shower and clean clothing will really contribute to your sense of well-being, and a happy, healthy person just can't help doing a good job and commanding respect.

—HELEN G. HUGHES



In the Public Interest

Speakers at the Iowa Medical Society's Fall Conference Outlined

Ways of Improving Voluntary Health Insurance Programs

The Fall Conference of County Medical Society Officers and Other Representatives that the Iowa Medical Society held on September 18 was asked to consider a wide variety of topics. Lee Forrest Hill, M.D., a Des Moines pediatrician, reviewed the purposes and services of the American Medical Association with the 190 physicians who were present. Congressman James Bromwell, of Cedar Rapids, discussed the Washington Scene in a long-distance telephone call from the nation's capital. John M. Rhodes, M.D., of Pocahontas, reported on the progress that is being made in accrediting osteopathic physicians and surgeons for professional cooperation with doctors of medicine; John G. Thomsen, M.D., of Des Moines, announced plans that the Iowa Interprofessional Association is making for a public meeting on health fads and fallacies; Robert C. Hardin, M.D., dean of the S.U.I. College of Medicine, spoke on recent developments in medical education; and F. C. Coleman, M.D., of Des Moines, reported the details of the agreement that the IMS has made with the State Board of Social Welfare, under which physicians will be paid their regular fees for the care of Medical Aid for the Aged patients.

PROPOSED CHANGES IN BLUE SHIELD

Several of the Fall Conference presentations by guest speakers and by IMS members will be published in full in subsequent issues of the JOURNAL, but it seems worthwhile here to summarize the ideas offered by those of them who discussed ways of strengthening and protecting voluntary health insurance.

George H. Scanlon, M.D., of Iowa City, the immediate past-president of IMS and currently the board chairman of Iowa Medical Service (Blue Shield), reminded his audience that physicians helped to pioneer prepayment for hospitalization in Iowa when they cooperated with the hospitals in setting up Blue Cross and when they created Blue Shield as a means by which people might protect themselves against catastrophic surgical, in-hospital medical and allied expenses. The doctors agreed at the outset that Blue Shield should provide "full service" to individuals and families with low or moderate incomes. Dr. Scanlon enumerated the policies which Blue Shield currently offers to Iowans, under which people with incomes and assets no greater than specified limits are assured that these types of doctor bills will be paid for them in full, and he pointed out that these policies are in line with the objective that was announced for Blue Shield by its founding physicians. In the light of current figures on personal income, even the most liberal of the income-limit policies are coverages for people of no more than average property and earnings, he said.

At this point it is opportune to interpolate some figures announced at the Conference by Mr. William E. Timmons, the commissioner of insurance for the State of Iowa. As an indication of how well Blue Shield's 717,693 members are satisfied, he said that though the State Insurance Department receives between 400 and 500 complaints per month, and though 90 per cent of them relate to the settlement of health-insurance claims, it received just 45 complaints relating to Blue Shield

during the entire year 1961, just 56 during 1962, and only 27 in the first 9½ months of 1963.

Dr. Scanlon, however, suggested a way of improving Blue Shield policies. Too many different types of contract, he thinks, are currently being offered, and through the elimination of as many as possible of them, considerable savings in administrative costs can be effected, and by that means the premiums can be lowered or additional benefits can be provided to policyholders.

Most of his other remarks concerned Blue Shield's no-income-limit policy which has been nicknamed "Blue Chip." In return for a premium somewhat higher than those charged for income-limit policies, Blue Shield guarantees that no matter how great a Blue Chip policyholder's income or assets may be, he will receive the listed benefits and will get no physician's bill. Originally, it was understood that physicians were not to be compensated according to a fee schedule for the care of Blue Chip patients, but were to receive their full fees, but the State Insurance Department subsequently refused to authorize a no-fee-schedule arrangement. Since then, physicians have disagreed about whether or not to continue letting Blue Shield offer the policy for sale.

Dr. Scanlon said that physicians have three alternatives among which to choose, as regards Blue Chip: 1. They can permit Blue Shield to continue paying physicians' claims on the basis of the Iowa Unit Fee Index and a \$5 coefficient, as it has done ever since the Insurance Department's ruling. 2. They can authorize the sale of a very high income-limit policy, with claims to be settled on the basis of a higher coefficient. 3. They can arrange to have Blue Shield settle physicians' claims on the basis of county averages of usual and reasonable fees.

He said his own preference is for the third of these, for the reason that it provides greatest flexibility and is most nearly in accord with the economic philosophy to which most physicians adhere.

He asked all Iowa doctors to review the matter by rereading the Supplementary Report of the IMS Policy Evaluation Committee, Supplemental Report "D" of the Board of Trustees, and the Report of the Reference Committee on Insurance and Medical Service, in the July, 1963, JOURNAL, and then to make their views known to the Policy Evaluation Committee prior to that group's next meeting. The question will be finally decided at the 1964 meeting of the IMS House of Delegates, next April.

Dr. Scanlon concluded his remarks by announcing that Blue Shield will shortly offer a "major medical" policy for sale. Though conventional policies pay the "first dollar" in all instances, they may not help policyholders adequately in meeting truly catastrophic expenses. "Major medical" insurance, on the other hand, requires the policyholder to pay the first \$50, let's say, of the expense occasioned by an illness or an accident, but pays all the rest, even of the biggest bills. Experts regard it as the ideal form of health insurance.

A NOTEWORTHY STUDY OF HOSPITAL UTILIZATION

Mr. Louis A. Orsini, of New York City, vice-chairman of the Health Insurance Council, a national organization of commercial health-insurance underwriters, told the Iowa doctors about an experimental study of hospital utilization that has been undertaken in a Michigan county. He said that preliminary findings would be announced at the end of October, and urged Iowans to watch for them.

Whether or not patients remain in general hospitals longer than absolutely necessary is highly important, he pointed out, not only because hospitals already take a larger share of each consumer's health dollar than do physicians, dentists or pharmacists, but also because hospital rates are certain to go on increasing. The wages currently being paid to nurses and other hospital employees have risen considerably in recent years, but they don't yet equal those being paid to people in comparable lines of work.

Five hospitals in a Michigan county—containing about 40 per cent of the general medical and surgical beds—have committees of staff physicians that are reviewing the cases of randomly-selected patients after their discharge, in an effort to discover how their lengths of hospitalization and the types and amounts of hospital service provided them compare with national averages. The diagnosis, the complications if any, and the type of therapy employed are being taken into consideration in each case, but it may be disclosed that there have been appreciable disparities among the lengths of stay and the services provided to like patients at various hospitals or under the supervision of various physicians. If hospitalizations can be shortened or if some services can be simplified or omitted without hazard to patients, hospital-insurance premiums can be kept from rising.

In many localities, Mr. Orsini reminded his audience, it may be revealed that there is an excess of general hospital beds, and if it can be shown that considerable numbers of convalescents can get along satisfactorily in limited-care facilities, either parts of hospitals or whole hospitals can advantageously be transformed into less elaborately equipped and less expensively staffed facilities. He also suggested the expansion of home care-homemaker services to assist greater numbers of chronically-ill patients in their homes.

CONCLUSION

The speakers whose topics have been mentioned or whose statements have been summarized here were by no means all of those who addressed the IMS Fall Conference of County Medical Society Officers and other Representatives. But those subjects and those suggestions are typical not only of the ones presented at that particular meeting. In addition, they represent the very numerous possibilities that physicians are constantly exploring in an effort to serve and protect the interests of their fellow citizens.

THE DOCTOR'S BUSINESS

Income Tax Savings in an Estate

HOWARD D. BAKER

Waterloo



Most people are aware of the high level of federal estate tax that is levied, once an estate exceeds the allowable exemptions, but unfortunately, the subsequent effects of income taxes upon the beneficiaries and the ways in which those effects can be minimized are not so well understood. Actually, the lowering of future income taxes may be of greater importance than the lowering of estate taxes.

We all recognize that income taxes will be reduced if any given amount of income has been divided among two or more persons. Thus, whenever practical, it is a good idea to include such an arrangement in a will. For example, Dr. X has a wife and two children, and it is estimated that his estate will produce an annual income of \$12,000. If that entire income were to be paid to Mrs. X, her annual federal income tax would be about \$2,370. Even though she would have to spend a large portion of that income for the support of the children, it would be taxed entirely to her.

Now, instead of leaving his wife the total income from his estate, suppose that it is practical for Dr. X to arrange annual payments of \$1,000 each to his two children outright, and to have \$750 per child per year accumulate in trusts. In this case, Mrs. X's income would be reduced to \$8,500 and her tax to \$1,450 per year. Each child would pay \$62 per year of tax, and the trusts would pay \$130 of tax per child per year. The total tax bill on the \$12,000 of income would thus be \$1,834, for an annual tax saving of \$536.

Practicality is of greater importance than tax economy, but if a man's estate is expected to produce more income than his widow is likely

to need, it is logical that the surplus income should be taxed to other beneficiaries in lower brackets.

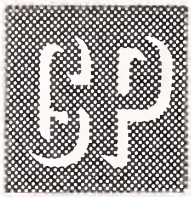
PLANNED USE OF PRINCIPAL

In some specific cases, planned use of principal can save income taxes. The anticipated annual income from Dr. A's estate is \$40,000. If he were to die, he would like his wife to have the benefit of the entire income, but he would also like to minimize her income-tax burden. Under his will, he divides his estate into two equal parts. One of these is left in trust to his wife, and the other is divided into separate trusts for his children. The income from Mrs. A's trust (\$20,000 per year) is to be paid to her, and an equal amount of income is to be retained in separate trusts for the minor children. But the will further provides that, besides taking the earnings, Mrs. A may withdraw a specified part of the principal from her trust each year, and the trustee is given discretionary power to pay additional parts of it to her in the event of need.

In this case, Mrs. A will be taxed only on \$20,000 of the income produced by her husband's estate, and since no income tax is due upon whatever amounts she withdraws from principal, she will have just as much money to spend as if he had bequeathed her the entire income of \$40,000 per year. On the other hand, the income kept in the trusts for her children will be taxed at much lower rates, and considerably more income will be retained. Thus, though the widow's trust will shrink, the trusts for the children will grow, and in the end there may be more capital for the use of the family as a whole.

As in other estate matters, one should take such actions as these only after a thorough study of the purposes that he wishes his estate to accomplish, and only under the guidance and counsel of his estate attorney.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.



Iowa Chapter of the American Academy of General Practice

Annual Scientific Assembly

The Iowa Chapter of the AAGP has just completed its fifteenth Annual Meeting and Scientific Assembly. The scientific program was excellent and was well received by those in attendance. The scientific exhibits, new this year, were interesting and received considerable attention. The technical exhibits afforded an opportunity for the members to visit with the various representatives about their company products.

The annual banquet was highlighted by the entertainment of Ford and Hines, an act of TV and nightclub fame. An evening of dancing followed the entertainment.

The following are the officers of the Iowa Chapter for the ensuing year:

President	Wm. A. Castles, M.D., Dallas Center
President-elect	C. H. Stark, M.D., Cedar Rapids
Vice President	Raymond Frech, M.D., Newton
Secretary-Treasurer	Arnold T. Nielsen, M.D., Ankeny
Board of Directors	Eugene Smith, M.D., Waterloo John R. Jaquis, M.D., Reinbeck George A. Paschal, M.D., Webster City Clyde J. Smith, M.D., Gilmore City Keith Wilcox, M.D., Muscatine Howard Rudersdorf, M.D., Sioux City John M. Hennessey, M.D., Manilla
Delegate to AAGP	Elmer M. Smith, M.D., Des Moines
Alternate	Charles V. Edwards, Jr., M.D., Council Bluffs
Delegate to AAGP	C. H. Stark, M.D., Cedar Rapids
Alternate	H. W. Mathiasen, M.D., Council Bluffs

STATE OFFICERS' CONFERENCE

During September the Annual State Officers Conference of the AAGP was held in Kansas City. This meeting is not scientific in character but is devoted to the discussion of organization and administration of Academy activities within the state

chapters by the respective chapter officers. The Iowa Chapter is very fortunate in having an efficient chapter office and has very few administrative problems. However, attendance at an SOC usually results in the gathering of some pearls.

Two Half-Day Conferences on Respiratory and Cardiac Problems

On Friday, December 6, there will be two half-day short courses in the Medical Amphitheater at University Hospitals, Iowa City. The SUI Department of Internal Medicine, the Iowa Thoracic Society and the Iowa TB and Health Association are cosponsoring the morning program on respiratory diseases, and the cardiac conference in the afternoon will be cosponsored by the Department of Internal Medicine, the Iowa Heart Association and the Iowa State Department of Health. There will be no registration fee, and the AAGP has approved each program for three hours of postgraduate study credit.

Morning

- 9:00 a.m. "Surgical Treatment for Bronchogenic Carcinoma"—Johann L. Ehrenhaft, M.D.
9:40 "Diagnosis and Treatment of Pulmonary Infections"—Chien Liu, M.D., professor of medicine and of pediatrics, University of Kansas
10:50 "Facts and Fallacies in Chest Roentgenography"—William J. Tuddenham, M.D., professor of radiology, University of Pennsylvania
11:35 Panel Discussion of Illustrative Cases
Presentation by Harry W. Fischer, M.D.
Panel consisting of the speakers of the morning, with R. E. Smiley, M.D. as moderator

Afternoon

- 1:40 p.m. "Cardiac Syncope"—William B. Bean, M.D.
1:50 "Cine Coronary Arteriography"—F. Mason Sones, M.D., Cleveland Clinic
2:20 "Emergency Cardiac and Respiratory Resuscitation"—Wm. K. Hamilton, M.D.
3:20 "New Dimensions of an Old Disease—Bacterial Endocarditis"—Ian Maclean Smith, M.D.

- 3:40 "Recent Advances in Cardiac Laboratory Diagnosis"—Donald L. Warkentin, M.D., associate in internal medicine
- 4:10 "Cine Cardioangiography in the Study of Acquired Valve Lesions"—Dr. Sones
- 4:40 Questions from the Audience.

Peptic Ulcer 1964—A Postgraduate Course for Surgeons

The Department of Surgery at the SUI College of Medicine will present a postgraduate short course for surgeons on the subject of peptic ulcer, on Tuesday evening and all day Wednesday, December 3 and 4. The registration fee is \$10, and the program is acceptable to the American Academy of General Practice for eight hours of credit.

TUESDAY, DECEMBER 3, 1963

Carousel Supper Club, Coralville
(1.3 miles west of University Hospitals on Highway No. 6)

- 6:30 p.m. Social Hour and Dinner
- 8:00 "Pathogenesis of Peptic Ulcer and Surgical Implications"—E. R. Woodward, M.D., head of surgery, University of Florida, Gainesville
- 9:00 Schedule Conference for Next Day's Operations—Lawrence DenBesten, M.D., resident in surgery

WEDNESDAY, DECEMBER 4, 1963

Medical Amphitheater, Room E-331 University Hospitals

- 7:30 a.m. Televised Operative Clinic—Operations by surgical staff; discussion by panel and registrants
R. T. Tidrick, M.D.
J. A. Weinberg, M.D., chief of surgery, Long Beach VA Hospital
E. R. Woodward, M.D.
J. A. Gius, M.D.

- 9:30 Exhibit: Vascular Lesions in Patients With Duodenal Ulcer—Dr. Gius

Conference Room E-405 University Hospitals

- 10:15 Definition of the Surgical Ulcer Patient
"The Role of the Radiologist"—H. W. Fischer, M.D.
"Laboratory and Endoscopic Aids"—J. A. Buckwalter, M.D.
"Review of S.U.I. Patients"—L. Raterman, M.D., resident in surgery

- 11:15 Problem Patients: Discussion of Management
E. S. Brintnall, M.D., moderator
J. A. Weinberg, M.D.
E. R. Woodward, M.D.
H. W. Fischer, M.D.
R. D. Liechty, M.D.
R. T. Soper, M.D.

- 1:45 p.m. "The Problem of Upper Gastrointestinal Hemorrhage"—Dr. Weinberg

- 2:30 "Stress Ulcers and the Neurosurgeon"—G. E. Perret, M.D.

- 2:45 "Gastric Cooling and Freezing"—Edward E. Mason, M.D.

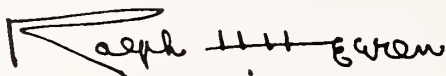
- 3:30 Controversial and Unsettled Issues: Resection in Perforated Ulcer; Gastrostomy for Suction; Duodenal Leak; Marginal Ulcer; Postgastrectomy Syndrome; High Gastric Ulcer; Acute Gastric Ulcers; etc. (Physicians are invited to send abstracts and x-rays of patients whom they wish the panel to discuss.)
R. T. Tidrick, M.D., moderator
J. A. Weinberg, M.D.
E. R. Woodward, M.D.
L. T. Palumbo, M.D.
F. D. Staab, M.D.
S. E. Ziffren, M.D.

AMA Tests Prove Point on Smoking

In a September 17 statement, the AMA's Committee on Medical Aspects of Sports stated that scientific evidence shows smoking really does "cut the wind" of athletes and that there's no longer any room for doubt that athletes should not smoke. It said ten inhalations of cigarette smoke may reduce the ability of the lungs to take in and utilize oxygen by as much as 50 per cent, thus in any close finish between well-matched athletes, the non-smoker has the edge.

The committee also found that tobacco smoke may slow down the rate at which stale air can be expelled from the lungs so that the heavy smoker has trouble in breathing quickly and easily under heavy exertion. There are times in most sports when a maximum effort is required for a brief moment. It may be a hard sprint in football or a leap for a rebound in basketball. The smoker, even though a fine natural athlete, highly trained and skilled, may find that his capacity for that all-important sprint or leap is slightly less than it might have been if he abstained from tobacco.

STATE DEPARTMENT OF HEALTH



RALPH H. HEEREN, M.D., ACTING COMMISSIONER

Influenza Immunizations—1963-1964

The U. S. Department of Health, Education & Welfare Influenza Surveillance Report of June 14, 1963, reports:

Influenza A—Widespread outbreaks of influenza A₂ occurred in 1962-1963 in most areas of the United States except for the West Coast. Considering that influenza A commonly occurs in two to three year cycles, widespread outbreaks of influenza A₂ are not anticipated this year. However, as in other inter-epidemic years, sporadic focal outbreaks may be anticipated; the West Coast spared in 1962-63, has a somewhat greater likelihood of experiencing influenza A outbreaks during the 1963-64 season.

Influenza B—A nationwide epidemic of influenza B was observed during 1961-62. Influenza B occurs in cycles of not less than four to six years and thus epidemic outbreaks of this strain are not anticipated for the coming fall and winter.

Even though large-scale epidemic outbreaks of influenza are not now anticipated for the coming winter, immunization of special groups against influenza is still strongly advised. Patients in the following disease categories have experienced the highest influenza mortality rates, and therefore should have specific protection as a routine practice:

- A. Persons at all ages who suffer from chronic debilitating disease, e.g., chronic cardiovascular, pulmonary, renal or metabolic disorders, and in particular:
 1. Patients with rheumatic heart disease, especially those with mitral stenosis.
 2. Patients with other cardiovascular disorders such as arteriosclerotic heart disease and hypertension, especially those with evidence of frank or incipient cardiac insufficiency.
 3. Patients with chronic bronchopulmonary disease; for example, chronic asthma, chronic bronchitis, bronchiectasis, pulmonary fibrosis, pulmonary emphysema, pulmonary tuberculosis.
 4. Patients with diabetes mellitus and Addison's disease.
- B. Pregnant women.
- C. Persons in the older age groups—those over 45, and particularly those over 65 years of age.

Serious consideration should also be given to immunizing those in medical and health services, public safety, public utilities, transportation, edu-

cation and communications fields. In industries and large institutions where absenteeism is of particular concern, large-scale immunization programs are to be encouraged.

Immunization should begin as soon as practicable and should be completed by mid-December. Since a two-week delay in the development of antibodies may be expected, it is important that immunization be carried out before epidemics occur in the immediate areas.

Studies made during the past year show that both the A and B strains of influenza demonstrate a continued change in antigenic structure. For this reason, more recently isolated strains of both the A₂ and B types have been added to the vaccine. The antigenic composition of the vaccine for the 1963-64 season is as follows:

Type	Strain	CCA Units Per cc.
A	PR8	100
A ₁	Ann Arbor 1/57	100
A ₂	Japan 305/57	100
A ₂	Japan 170/02	100
B	Great Lakes 1739/54	100
B	Maryland 1/59	100
		600

The U. S. Public Health Service Surveillance Committee suggests the following immunization schedule:

A. *Adults and Children Over 12 Years.* Those not immunized during or since 1957 should receive a 1.0 cc. (600 CCA units) dose subcutaneously as soon as practicable after September 1 and a second 1.0 cc. dose about two months later. The course of immunization should be completed by mid-December. Those given at least one dose of vaccine since 1957 should receive a single booster dose of 1.0 cc. subcutaneously.

B. *Children 6 to 12 Years.* Those not immunized during or since 1957 should receive a 0.5 cc. (300 CCA units) dose subcutaneously as soon as practicable after September 1 and a second 0.5 cc. dose about two months later. The course of immunization should be completed by mid-December. Those given at least one dose of vaccine since 1957 should receive a single booster dose of 0.5 cc. subcutaneously.

C. *Children 3 Months Through 5 Years.* Those not previously immunized should receive 0.1 to 0.2 ml. (60 to 120 CCA units) of vaccine subcutaneously on two occasions, separated by one or two weeks. A third

inoculation of the same strength should be given about two months later. The schedule of vaccination should be completed by mid-December. Those who have received at least one dose of vaccine previously should receive a single dose of 0.1 to 0.2 ml. subcutaneously. Since 20 per cent or more in this age group may experience a febrile reaction to the vaccine, an antipyretic may be indicated.

Morbidity Report for Month of
September 1963

Diseases	1963 Sept.	1963 August	1962 Sept.	Most Cases Reported From These Counties
Diphtheria	0	0	11	
Scarlet fever	78	104	116	Jefferson, Johnson
Typhoid fever	0	0	1	
Smallpox	0	0	0	
Measles	34	26	51	Clay, Scott
Whooping cough	35	30	8	Des Moines, Polk
Brucellosis	10	13	5	Dubuque, Scott
Chickenpox	17	17	22	Des Moines, Polk, Story
Meningococcic meningitis	1	1	1	Woodbury
Mumps	173	101	52	Dubuque, Polk, Scott
Poliomyelitis	0	0	0	
Infectious hepatitis	13	22	54	Scott, Tama
Rabies in animals	28	27	21	Clinton, Jefferson, Monona, Palo Alto, Polk
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	28	58	39	For the state
Syphilis	71	99	80	For the state
Gonorrhea	95	168	117	For the state
Histoplasmosis	2	6	3	Davis, Linn
Food intoxication	0	0	0	
Meningitis (type unspecified)	4	1	0	Madison, Polk, Scott, Wapello
Diphtheria carrier	0	0	3	
Asceptic meningitis	0	0	1	
Salmonellosis	4	8	45	Black Hawk, Buchanan, Johnson, Linn
Tetanus	1	0	0	Hardin
Chancroid	0	0	0	
Encephalitis (type unspecified)	2	0	0	Dubuque, Polk
H. influenza meningitis	0	0	1	
Amebiasis	2	1	3	Boone
Shigellosis	3	2	0	Johnson, Polk
Influenza	0	0	0	

Iowa Tetanus Deaths—1952-1961,
Inclusive

Age	Total Deaths	Male	Female	Rural	Urban
Under 1	4	3	1	1	3
1-4	1		1	1	
5-9	1	1		1	
10-19	2	1	1		2
20-29	3	1	2	3	
30-39	5	4	1	3	2
40-49	6	6		5	1
50-59	2	1	1	2	
60 +	17	13	4	9	8
TOTAL	41	30	11	25	16

Reported Cases of Tetanus in Iowa
1952-1961, Inclusive

Year	Cases Reported	Deaths	Year	Cases Reported	Deaths
1952	3	2	1957	6	3
1953	1	5	1958	2	5
1954	3	4	1959	9	5
1955	1	5	1960	1	4
1956	8	2	1961	5	6

The two accompanying charts, showing 41 deaths from tetanus in Iowa during the 10 years 1952-1961, inclusive, are based upon material available from two sources. The data relative to deaths are derived from death certificates filed in the Division of Vital Statistics of the State Department of Health. The information on the 39 reported cases of tetanus, for the same period, is from the case reports of the Division of Preventable Diseases of the State Department of Health.

Tetanus has been a reportable disease for many years, in Iowa, but physicians fail to report many cases of it because it is not a communicable disease. For that reason, almost always, the number of reported cases fails to equal, let alone to exceed, the number of deaths. Usually, the Department first learns of tetanus cases by way of newspaper clippings. It then attempts to trace each case, and in so doing it obtains the name of the attending physician and gets him to verify the diagnosis.

In 1958, the S.U.I. Institute of Agricultural Medicine conducted a survey of tetanus cases in Iowa hospitals for the five-year period ending June 30,

1956, and revealed that there had been 114 hospitalized cases with 20 deaths, or one death for each 5.7 cases.* That death rate was a lower one than studies by other workers had indicated. In a national review of tetanus made in 1957, Arnick and Alexander had reached the conclusion that even with good medical care, every third case of tetanus results in death.** Using the case-death ratio that the Institute of Agricultural Medicine found, Iowa would have had well over 200 cases of tetanus during the 10-year period ending December 31, 1961.

The chart showing ages and places of residence is interesting. It may be a bit surprising to notice that four deaths occurred in persons under one year of age, and 17 in persons 60 years of age or over. In other words, half of the deaths were in the very young and in group of definitely advanced age. As between urban and rural, the ratio of cases was about 2 to 3.

From the case report cards containing information as to the nature of the accidents associated with the infections, it is apparent that many tetanus cases were the results of minor accidents. The reported accidents included: splinter beneath fingernail; puncture wound of foot; nail in foot; nail puncture in hand (incurred while patient was cleaning chickenhouse); knee laceration; hand laceration (while patient was siding a barn); sickle injury (while patient was cutting weeds); puncture of eyelid; finger cut in corn sheller; rusty nail driven into hand (while patient was working in hog shed); laceration of palm of hand with fish hook; farm implement accident; and thumb laceration (in a fall while patient was climbing stairs).

Thus, in many instances the injuries leading to cases of tetanus are minor and are regarded as negligible. For example, it was five days before the person who suffered the puncture wound of the eyelid felt he should see a physician. Of the 31 cases hospitalized at University Hospitals, Iowa City, during the five-year period referred to above, five had resulted from wounds so trivial that the patients couldn't remember being hurt!

Treatment for tetanus includes tetanus antitoxin given in large amounts. The injection is a painful procedure, and very frequently it is followed by a severe reaction. One can avoid the necessity for the use of tetanus antitoxin in the event of major injury, and can avoid the danger of fatal infection that can follow a mere scratch, by taking the primary immunization series, and then getting booster injections as needed.

* 1958 Study on Tetanus in Iowa, Staff of the Institute of Agricultural Medicine, Iowa City.

** Arnick, N. W., and Alexander, E. R.: Tetanus in the United States: review of problem. *AM. J. PUB. HEALTH*, 47: (Dec.) 1957.

Poliomyelitis in the U. S. 1962 and 1963

Only 909 cases of poliomyelitis were reported in the United States in 1962, and if present trends continue, about half of that number can be expected to have occurred this year.

In its bi-monthly statistical bulletin *PROGRESS IN HEALTH SERVICES*, the Health Information Foundation reported on the great advances made against polio in the past decade. In 1952 there were 37.2 cases of polio for every 100,000 people in this country. By last year, the rate had dropped to an amazing 0.5 per 100,000 population, and this year's rate may drop to 0.2 cases for every 100,000 Americans.

The estimated paralytic case rate followed the pattern for all cases. From 12.0 paralytic cases per 100,000 population in 1951, this rate rose to 23.2 paralytic cases per 100,000 population in 1952, and then dropped to 1.5 in 1957. There were slight upturns in 1954, 1958 and 1959, but since 1959 the paralytic case rate has dropped consistently. Last year this rate reached a low of 0.4. The bulletin pointed out that "present indications are that the 1963 rate will be considerably lower, possibly something like 0.1 per 100,000 population."

At the same time the number of deaths from the disease has also dropped. In 1916, over 7,000 deaths were recorded, and in 1952 the number was still in excess of 3,000, but in 1962 the number was down to just 47.

A large proportion of the American population is still unprotected from the disease. A 1962 survey showed that 60 per cent of those under age 50 had received three or more injections of the Salk vaccine, and 37.5 per cent of that under-50 group had received four or more injections. Of the same group, 10.2 per cent had received one or two doses of the oral (Sabin) vaccine, and about 4.5 per cent had received the full complement of three doses.

Mass immunization with the Salk vaccine has been one of the most effective public health programs ever undertaken, the Foundation asserted. In the short span of eight years, the disease has been almost eradicated in this country. "But when the vaccine was first introduced, critics were numerous and vocal," Dr. Lowell T. Coggeshall, associate director of the Foundation and vice-president of the University of Chicago, pointed out. "However, claims of extravagance and claims that the disease was not widespread enough to warrant all the time and money being expended did not delay necessary action."

"If the few cases of polio that occurred as the result of an improperly inactivated batch of polio virus had resulted in the delay of the polio vaccination program just one year," Dr. Coggeshall continued, "there probably would have occurred, based on the 1951-1953 averages, over 43,000 cases of polio, with over 26,000 of these paralytic cases, which were avoided by the prompt use of the vaccine."

Woman's Auxiliary News

Fifteenth Annual Health Education Workshop—July 15 and 16 Iowa State University, Ames

*Theme: Health Problems of the school aged child
—bridging the gap between knowledge and action.*

Our Auxiliary had three representatives attending the Health Education Workshop this year—one for the entire session and the other two part of the time. They were: Mrs. E. B. Dawson, of Fort Dodge, our Health Careers chairman, Mrs. Hazel Lammey, of our Iowa Medical Society's staff, and I.

The program opened with an address: "What Are the Health Problems of the School Age Child—Mental, Emotional and Physical?" by Dr. Evalyn S. Gendel, of the Division of Maternal and Child Health, Kansas State Board of Health. Dr. Gendel is a most attractive mother of five—charming and highly articulate. She is an excellent speaker, well qualified and authoritative. As somewhat of a "veteran" of these workshops, I am glad to report that I found this year's session very stimulating for two reasons: the outstanding qualifications of Dr. Gendel and the general interest in the topic of *School Health* shown by the delegates of the many groups represented there.

Dr. Gendel listed the leading health problems for children in two age groups. First, for school children from 5-14 they are: 1. Accidents, 2. Cancer, 3. Upper respiratory infections, 4. Rheumatic fever and heart conditions, 5. Congenital malformations. For youngsters of the second group, from 15-20 years of age, the major health problems are: 1. Accidents, 2. Cancer, 3. Homicide, 4. Suicide. (These last two, we found most startling.)

Formerly, Dr. Gendel pointed out, infectious diseases were the leading cause of illness for school age children, but this is no longer true, for immunization programs have become increasingly effective. Acute illnesses and other conditions that are frequently encountered in schools include: 1. Upper respiratory infections—a major cause of absenteeism, 2. Gastrointestinal upsets, 3. Childhood contagious diseases, 4. Dental problems, 5. Accidents, and 6. Eye and ear infections.

Mental illness is a growing problem in the schools today. It is increasingly necessary, we

were told, that both teachers and parents be taught to recognize the early symptoms of mental illness or emotional disturbance so that the child can benefit from prompt treatment. Because mental illness in the school age group has only recently begun to attract attention, it undoubtedly is the most frustrating area of all school health problems.

Some schools are setting up special classrooms for the mentally retarded children in their school districts. Dr. Gendel cautioned us that this should be done only when the most expert advisors and personnel are available.

She also mentioned the health handicap of obesity in the school child. It frequently leads to mental and emotional problems, also.

Additional areas of concern in school health involved: nutritional deficiencies, youthful pregnancies, use of alcohol and stimulants, smoking, the seeking of hallucinatory experiences by sniffing airplane glue, holding the breath, etc., and the overuse of "pep" pills.

Another topic introduced into the discussion was how much of a physical fitness program should be implemented in the schools. Dr. Gendel felt a minimum of 15 minutes should be offered daily. The need for better physical-check-up programs for the school age child and also for teaching personnel, food handlers, school custodians, etc. was also stressed.

Those in attendance at the conference were divided into four discussion groups to exchange ideas on these topics. We were asked to choose the three biggest problems in school health, and then to devise six courses of action concerning the health of the school age child that we should explore, study, and work on in our own communities. My group's conclusions on the latter of these assignments were pretty typical of the final consensus: They were: 1. To work for fluoridation of water supplies where the fluoride content is low. 2. To advocate better immunization requirements. 3. To advocate health examinations for school personnel, custodians and food handlers, annual tuberculin tests and perhaps physical examinations every three years. 4. To arouse more concern for the children's "emotional" health. 5. To initiate better pre-school and school-child checkups. (A good plan would be to have three such examinations—pre-school, again at the age of ten and the last one

at about the age of 15.) 6. To make sure that the physical fitness programs in our schools are adequate and to secure the deemphasis of inter-school competition at the junior-high level, and to advocate intramural programs instead.

Under the topic of physical checkups, Dr. Gendel recommended better eye and ear testing programs. Eye testing should be done annually or at least biennially. Auditory testing could be done at the same age levels recommended for the physical checkup.

Some time was also given to the topic of the development of school health councils. Some states have this on a state level—others handle it locally. It was felt that a council would afford a better opportunity for a concentrated attack on school health problems than would scattered groups and individuals.

Thanks to Dr. Gendel, to excellent pre-program planning, and to an unusually receptive and vocal workshop group, our days at the Health Education Workshop this year were well spent. We hope that some definite results will be seen in many of our Iowa schools.

TO ALL AUXILIARIES: IF YOU ARE STILL LOOKING FOR A REWARDING PROJECT TO "GET TO WORK ON" THIS YEAR, WHAT COULD BE A BETTER ONE THAN THE HEALTH PROBLEMS OF THE SCHOOL AGE CHILD? HOW ARE OUR SCHOOLS MEASURING UP?

—MILDRED LEINBACH
Rural Health Chairman

Physicians' Wives Join IPPL

Under the recently created Woman's Division, physicians' wives have been accorded the privilege of full memberships in IPPL, the Iowa Physicians Political League. As members, they will have the opportunity to participate in political education programs and to contribute, through their dollars and know-how, to candidate-support activities.

IPPL, an affiliate of AMPAC, the American Medical Political Action Committee, provides physicians, their wives, and their families an opportunity for a better understanding of political issues and voter responsibility. By working together, the medical family can form an intelligent and effective force for good government.

In the area of political education, physicians' wives have been assigned a stimulating and responsible role. As an aid to achieving maximum effectiveness, AMPAC's course in political education, the "Barnstormer," will be available soon to Iowa physicians and their wives.

Candidate support is bi-partisan. Neither AMPAC nor IPPL is affiliated with either political party, and both of them support candidates on the basis of their individual merit and their positions on pertinent issues.

Support for Iowa's worthy political candidates, both in money and in manpower is the best investment any of us can make in the future of the free enterprise system and constitutional government. Success depends on preparation. The 1964 election results will be determined by the effort and help we provide before the election. Membership dollars contributed now will be available to support worthy candidates in the coming Iowa primary and general elections.

Memberships in the Woman's Division of IPPL begin at ten dollars. A joint membership in both IPPL and AMPAC is twenty-five dollars, and entitles the member to receive the educational newsletter "Political Stethoscope."

Additional information on IPPL membership is available through county IPPL chairwomen, or by writing to Iowa Physicians' Political League, Woman's Division, 529-36th Street, Des Moines 12, Iowa.

Our goal is 100 per cent participation by the physicians' wives of Iowa. As a member of the IPPL team, each physician's wife will be a full partner and valued ally in the battle for good government and the preservation of the free enterprise system.

WASAMA

A get-acquainted tea was sponsored by the Woman's Auxiliary to the Student American Medical Association recently at the University Athletic Club in Iowa City. Mrs. Wayne J. Tegler, advisor, was the guest speaker. Her topic was "The Responsibility of a Doctor's Wife."

The University of Iowa chapter is one of 51 located at medical schools throughout the United States. The purposes of the organization are to establish a closer relationship between the wives of medical students and to educate the medical wife to the problems and responsibilities of the profession.

Mrs. Eldon Reed is president for the 1963-1964 year. Other officers are Mrs. John Hasbrook, first vice-president; Mrs. Albert Bryan, second vice-president; Mrs. James Hill, secretary, and Mrs. Wendell Petty, treasurer. The chapter meets regularly and has an exceedingly interesting program planned for the current year.

Cerro Gordo Auxiliary

In October, the Cerro Gordo County Medical Auxiliary opened its program for the coming year with a progressive dinner which started at the home of Mrs. Robert Powell and concluded at the home of Mrs. George West. Mrs. Paul Potter, president, was in charge of the meeting. Plans for the monthly meetings were finalized.

The November meeting will honor future nurses at the home of Mrs. S. H. Vegors. Velma Shearer, Park Hospital, will be the speaker. Other pro-

grams planned for the year include "Mental Health Facilities in the Community," Rural Health, Doctor's Day, a guest day, and one social meeting.

Officers, in addition to Mrs. Potter, the president, are Mrs. C. O. Adams, vice-president; Mrs. T. E. Davidson, secretary; and Mrs. A. E. Hale, treasurer.

Sixteenth AMA National Rural Health Conference

ARLINGTON HOTEL, HOT SPRINGS, ARKANSAS

SEPTEMBER 20-21, 1963

With this meeting the AMA went back to calling its Rural Health gatherings National rather than Regional Rural Health Conferences. Regardless of the title given them, these meetings tend to attract, principally, an audience from the immediate vicinity of the conference city. A few representatives of state medical societies and other organizations at considerable distances send representatives, but they make up only a small minority. It seems, however, that it is somewhat easier to engage top-notch speakers for a meeting that is billed as "National" rather than "Regional," and that the change in terminology had been made for that reason.

In view of the rather small population of Hot Springs and vicinity, the attendance was quite large, about 500 persons being present for each of the sessions. One of the local physicians remarked that Hot Springs people had turned out for the meeting because "Arkansans just like to attend meetings," but it was obvious that most everyone in attendance was vitally interested in the problems being discussed. The Iowans in attendance were Dr. and Mrs. S. P. Leinbach of Belmond, Dr. and Mrs. J. W. Gauger, of Early, and Mr. E. W. Hamilton, of the IMS staff.

COSTS OF HEALTH CARE

The principal feature of the Friday morning program was a panel discussion on the topic "Who Shares Your Health Dollar?" It was an extraordinarily effective series of presentations. Robert J. Benford, M.D., director of medical relations for the Pharmaceutical Manufacturers Association, Washington, made two significant statements regarding the dollars-and-cents aspect of drug company practices. He asserted that, on the average, generic-name prescriptions would save the customer no more than 20 cents each, and that dividing up all of the profits of pharmaceutical companies and returning them to prescription purchasers would lower costs to patients by no more than 24 cents per prescription.

He emphasized that drugs cost no more of the health care dollar in 1963 than they did in 1930.

He urged the audience to oppose the bill to re-

quire licensing of drug patents to firms other than those that had developed the patented products, saying that such a measure might discourage the research activities being conducted under private auspices.

R. B. Robins, M.D., a member of the AMA Board of Trustees and a former president of AAGP, from Camden, Arkansas, documented the contention that "the American people never had it so good" by pointing out that the shares of the consumer dollar that go for clothing, housing and food have decreased over the last 20 years, and that although medical care's share of the consumer dollar has increased from four to six cents during that period of time, a larger increase has gone to expenditures for liquor and tobacco—from two to five cents. He defended increases in physicians' and hospitals' charges—particularly the latter—by calling attention to the fact that during a six-hour period, in caring for an automobile accident victim, 21 people put in 26½ man hours saving one life.

Harold M. Flickinger, D.D.S., chairman of the Council on Insurance of the American Dental Association, from Siloam Springs, Arkansas, said that although dentists are busy and are providing two billion dollars worth of dental care per year, they are serving just 45 per cent of the American people during any year. Thus, 55 per cent of people are denying themselves dentistry. He called attention to the fact that preventive services in dentistry are a relative bargain financially as well as from the point of view of comfort. A filling costs less than the antibiotics and extraction which become necessary when prophylactic dental care has been neglected.

The Oklahoma and Arkansas Dental Societies, among others, have post-payment plans for the financing of dentistry, he pointed out. Private insurers are just beginning to enter the dental insurance field, and he invited groups of 75 or more persons to apply to him for the names of private firms that offer such insurance.

Mr. Frank S. Groner, administrator of the Baptist Memorial Hospital, Memphis, was the next speaker. He is an enthusiastic defender of the present system for financing hospital care. Among other things, he said that we in the United States could have a system like the British National Health Service merely by tripling our income tax. To dramatize the reasonableness of physicians' charges in this country he told of an incident in which a man in Hollywood persuaded a physician to drive him to his home in a distant part of town, on the pretext that his wife needed emergency medical care. When they arrived, the man admitted that his wife was not ill, but explained that the physician's fee for the call would be less than taxi fare from downtown Hollywood to his home.

Mr. Groner objected to the fact that the Bureau of Labor Statistics computes the hospitals' share of the health dollar on the basis of hospital costs, rather than actual hospital charges. He asserted

that institutions such as his own don't raise their charges nearly so fast as their costs go up. He urged opposition to a proposal, currently in Congress, to add either one dollar or two dollars per patient day to taxes levied on hospitals.

THE GP'S ROLE IN TREATING MENTAL ILLNESS

Robert Felix, M.D., director of the National Institute of Mental Health, Bethesda, talked principally about the need for family doctors to practice good preventive and therapeutic psychiatry, and he asserted that medicine must help them in preparing themselves for those activities. MHI, he said, offers stipends for three-year psychiatric residencies, but more importantly it helps to finance postgraduate education (short courses) for GPs, internists and pediatricians in the psychiatric aspects of their patients' problems.

He asserted that the problems of schizophrenics are identified with the forms of thinking that typify their respective families in 16 out of 18 cases. Because the general practitioner or family doctor is familiar with the family situations from which schizophrenic patients come, he is in the best position to remedy the causes of the patients' difficulties.

He encouraged the formation of community mental health centers and of psychiatric wards in general hospitals. Further, he said that it is necessary for community organizations to do more in preparing people for the return of their relatives who have been in mental hospitals and must recuperate at home. He asserted that he wants to see psychiatry as little socialized as any other branch of medicine.

A WAY TO GET JOHNNY TO BRUSH HIS TEETH CAREFULLY

The final presentation of the afternoon session was one by Sumter Arnim, D.D.S., director of the Postgraduate School of Dentistry, University of Texas Dental Branch, Houston. He asserted that dental health means about 15 years' longer life span, and also that sugar and flour are the only constituents in the diet that cause caries. The University of Texas Dental Branch offers pamphlets on causes and consequences of tooth decay.

He exhibited an excellent color motion picture designed to teach children to care properly for their teeth, and said that prints of the film will be available for purchase or borrowing very shortly.

The most interesting feature of Dr. Arnim's presentation concerned what are called "disclosing wafers," containing a red food dye that permeates food particles present on a patient's teeth. These wafers, he said, are available from Procter & Gamble and from D. Brownlee Company, Belair, Texas. A rural school teacher in Illinois had pioneered the idea. She had had her pupils brush their teeth as usual, and then put the dye into their mouths

to show the faults of their brushing. Dr. Arnim said that there is danger in overbrushing one's teeth, but that most people, particularly children, are so inefficient in this process that they might just as well not brush them at all.

The addresses at the banquet meeting on Friday night were delivered by Mrs. C. Rodney Stoltz, president of the AMA Woman's Auxiliary, and Norman Welch, M.D., president-elect of the AMA. Mrs. Stoltz's remarks were confined to greetings, and Dr. Welch spoke on the dangers of socialized medicine.

FIRST AID CAN EASILY BE OVERDONE

The first address at the Saturday morning session, by Norman H. Gardner, M.D., of East Hampton, Connecticut, was especially effective chiefly because he is a master of dry humor. On the topic "What Not to Do Before You See Your Doctor," he spoke of the dangers of self-diagnosis, of taking leftover antibiotics, and of too much first aid. He poked fun at the patient who is sure he knows what is wrong with him and wants only a prescription from the physician, and he lamented the attitude of the patient who tries to hide a serious symptom from his physician. He suggested some home remedies for use until the doctor arrives—saying that a rolled-up magazine makes a good temporary splint (though he warned against a layman's attempting to reduce the fracture), and he suggested that a Kleenex makes a good bandage, for it is easier than cotton to remove from the surface of a wound.

W. Wyan Washburn, M.D., chairman of the AMA Council on Rural Health, Boiling Springs, North Carolina, urged community action for mass immunizations.

PROGRESS IN COMBATting ANIMAL-BORNE DISEASES

James H. Steele, D.V.M., chief of Veterinary Public Health at the USPHS Communicable Disease Center, Atlanta, said that anthrax has been virtually eradicated from this country, since there were no more than nine human cases and fewer than 1,000 animal cases of the disease last year, and that brucellosis is near eradication. Eighty per cent of the area of the United States is accredited brucellosis-free. Leptospirosis, he said, is replacing brucellosis as the most important animal disease transmissible to man.

Dr. Steele said that salmonellosis is a factor in the "chicken war" with Europe. Mixed feeds for poultry are a factor in the dissemination of the disease. Curiously enough, he mentioned Iowa in commenting on the decreased prevalence of trichinosis in this country, saying that it has decreased from 18 to 5 per cent among Iowa hogs. The disease is usually caused by feeding of garbage to animals.

Dr. Steele remarked that 1963 is the 100th

anniversary of veterinary medicine in the United States.

Dr. Steele had just returned from Russia, where he spent six weeks touring the country. He showed some excellent color slides of the things that he had seen there, and commented upon them. It was his impression, among other things, that Russian medical and veterinary education is far inferior to our own, being taught on a technological-school, rather than a university level.

A STATEWIDE COMMUNITY HEALTH CONTEST

The final presentation of the Conference was made by a group from Hattieville, Arkansas, a community of just 30 families. Hattieville had been declared the winner of an Arkansas Medical Society public health competition this year. (1) Everyone in town had been persuaded to get the immunizations suggested by the state medical society. (2) One member of each family had taken the course in medical self-help. (3) The TB x-ray mobile unit had examined all persons over 18 in the community, and transportation had been provided from Hattieville to the center where the mobile unit stopped. (4) Every resident had secured a dental-health check up. (5) Following a campaign to get everyone to install indoor plumbing, only two homes remain without it. (6) A sanitary-fill garbage-disposal project had been started. (7) A campaign had been conducted to encourage people to screen their windows. (8) All of the dogs in town had been vaccinated against rabies. (9) A distribution of rat poison had been made, and people had done their best to get rid of rats.

The prize presented to the community of Hattieville by the Arkansas Medical Society had consisted of a plaque, which is displayed in the town hall there.

S. S. Hope to Sail for Ecuador November 20

The white hospital ship *S. S. Hope* will begin its third voyage on or about November 20 when the vessel leaves New York City to begin a medical mission to Guayaquil, Ecuador. Dr. William B. Walsh, president of Project HOPE has announced.

The announcement followed an intensive survey made by this non-profit organization formed in 1958 by the American people to bring better health knowledge to the people of newly emerging nations. Previously, the former United States

Navy hospital ship has visited Indonesia and South Viet Nam, and Peru.

Invitations to Project HOPE were extended from three continents but Ecuador was chosen because, said Dr. Walsh, "there was an intense desire on the part of their physicians for a HOPE visitation." This was expressed primarily through the Ecuadorian HOPE Committee which has as its chairman former Dean of the Medical School at Guayaquil, Dr. Francisco Rizzo-Velasco. Dr. Rizzo has expressed the need for medical trainees in his country to have the opportunity of working in the atmosphere of an American hospital. As on previous missions American professionals will be working closely with their local counterparts who will eventually be teaching others, resulting in a multiplication of HOPE's services.

Objectives of the mission to Ecuador, as set down jointly by the local Committee and Project leaders in the recent survey, include:

(1) An upgrading of medical education in Ecuador, concentrating on the three medical centers of Guayaquil, Quito and Cuenca, with a stress on the training of laboratory and X-ray technicians, physical therapists and administrators.

(2) A strong dental program involving the areas of oral surgery, pedodontics, periodontics, oral pathology and diagnosis, restorative dentistry, prosthodontics, endodontics, orthodontics and general practice.

(3) A "rotating" system for local medical students through HOPE's various services, offering experience in the medical team concept.

(4) A program to give further training to graduate and auxiliary nurses.

(5) A public health program in the suburbios (underprivileged areas) highlighting preventive medicine, immunization and public health technics.

(6) A supplementary program for the already successful Servicio Cooperativo Interamericano de Salud Publica Program.

(7) An over-all demonstration of the willingness of the people of the United States to teach "the self-help concept" to those who demonstrate the willingness to help themselves.

(8) A demonstration of the "multiplier effect" which should result in changes in hospital organization, administration and teaching technics, resulting eventually in better health and economy for Ecuador.

HOPE's medical staff of volunteer physicians, dentists, nurses and paramedical personnel have trained some 1,700 local doctors and nurses in the three nations visited to date, performed over 4,000 major operations, and examined and immunized nearly half a million people.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. G. J. McMillan, 436 C Avenue, Fort Madison
President-Elect—Mrs. H. G. Ellis, 5504 Shriver Avenue, Des Moines 12

Recording Secretary—Mrs. N. A. Schacht, 1025 North 23rd Street, Fort Dodge

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Parkinsonism Is Unlikely to Disappear

Parkinsonism is not dying out, and will probably continue to be a major neurologic problem in the future, a Columbia University group has reported in the September issue of *ARCHIVES OF NEUROLOGY*. Earlier, it had been predicted that the disease would die out by 1980, on the basis of figures indicating that the average age of patients at the onset of the disease gradually advanced from 32 to 59 years between 1920 and the 1950's.

The authors, Drs. R. C. Duvoisin, M. D. Yahr, M. D. Schweitzer and H. H. Merritt, say that the relationship of Parkinsonism to an epidemic of sleeping sickness between 1917 and 1926 has never been fully documented. Studies prior to the epidemic indicated that the mean age at onset was between 51 and 53 years, and that the disease was extremely rare in persons under 40. Then another study indicated that the mean age at onset dropped to 36 years during the 1920's because a large number of young persons developed Parkinson-like symptoms as an aftermath of the sleeping-sickness epidemic. These cases comprised about two-thirds of all cases of Parkinsonism at that time. The new syndrome apparently continued,

representing about half of all such patients between 1930 and 1942.

The Columbia group reviewed case records of all patients with Parkinsonism at Columbia-Presbyterian Medical Center during 1962, and found the mean age at onset for 166 patients whose illnesses began between 1950 and 1962 was 56 years.

These findings indicate that Parkinsonism had its usual onset in middle life from the time it was first recognized by James Parkinson in 1817 until the epidemic 100 years later. The epidemic then left in its wake enough people with Parkinson-like syndromes to depress the mean age at onset for several decades. The study of the 1962 patients indicates that few if any new cases of the disease are the consequences of sleeping sickness, and that all, or nearly all, Parkinsonism of recent onset represents the original form of the disease. As a result, the mean age at onset has now returned to the range that was recognized prior to the epidemic.

Although present knowledge does not permit an estimate of the net effect of the disappearance of the epidemic-caused form of the disease and of the increasing longevity of the population as a whole, the investigators said it seems likely that Parkinsonism will continue as a major neurologic problem in the future.



The Iowa Medical Society's Fall Conference, held on September 18 at the Savery Hotel in Des Moines, was attended by 190 doctors. General topics of the Conference included IMS Blue Shield relations, the AMA, "usual and customary fees" for MAA patients, and reapportionment of the legislature. Mr. James Bromwell, member of the House of Representatives in the U. S. Congress, was not able to be present, but he discussed the "Washington Scene" by means of a long distance telephone call.

JOURNAL

of The

IOWA MEDICAL SOCIETY



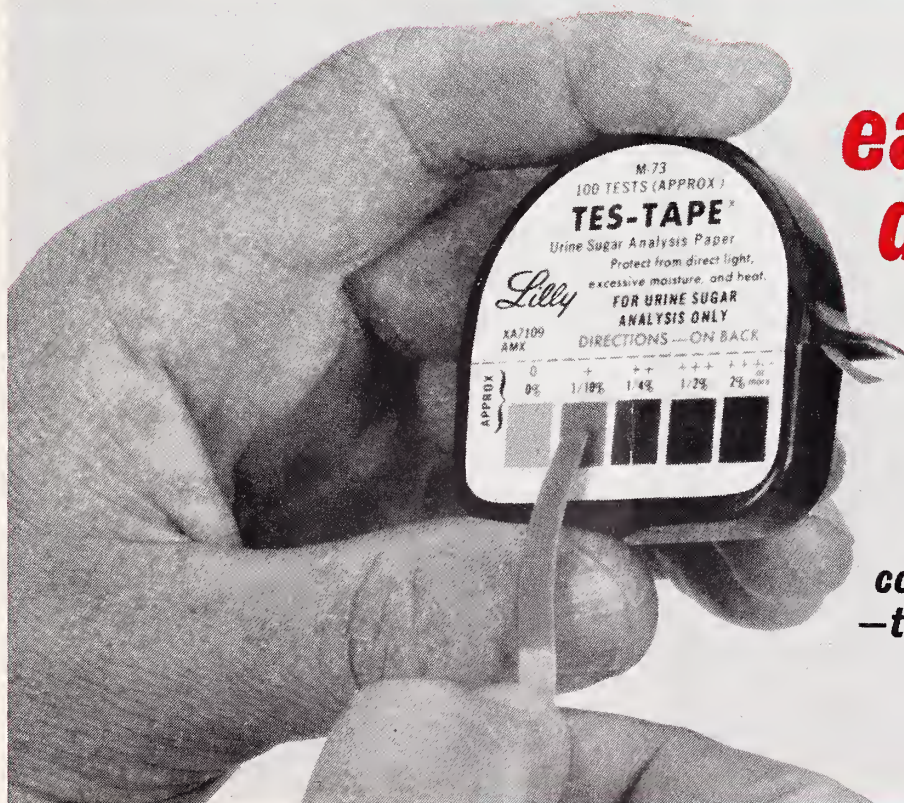
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STOP—LISTEN—LOOK

GEORGE H. SCANLON, M.D.
Iowa City

DURING THE NEXT FEW MINUTES, I want you. . .

- . . . to stop and reflect on the years that Blue Shield has been in existence;
- . . . to listen to Blue Shield proposals developed for your consideration by the Iowa Medical Society's Policy-Evaluation Committee and House of Delegates, and Blue Shield;
- . . . to take a look at what the future may hold for Blue Shield.

November 1, 1964, will be the 20th anniversary of the date on which the House of Delegates of the Iowa State Medical Society authorized the creation of Iowa Medical Service (Blue Shield).

Let us consider for a moment the impressions and attitudes of physicians who were responsible for the formation of Blue Shield. This is best summed up in a paragraph which appeared in the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY, published in October, 1944, one month prior to the Society's approval of the plan:

"Shortly the House of Delegates will be called to a special session to consider [a prepayment, non-profit medical service plan for Iowa] and to place its official stamp of approval upon a final draft. This is perhaps the most important matter that has ever confronted Iowa physicians as a group. It is medicine's answer to the demands of the people for security against disaster from catastrophic and unexpected illness. The government proposes to meet the same demand through compulsory insurance. There is no question but that medicine's voluntary non-profit insurance plan is vastly superior to any governmental, politically dominated, compulsory insurance program, both from the point of view of the physicians who render the service and of the people who receive the service. But, and there should be no dodging of this issue, the people are going to have one plan or the other. If we as physicians wish to avoid state medicine, the op-

portunity lies immediately before us. The task that confronts us is not an easy one. Hard work and clear thinking beyond the ends of our noses are essential if we are to make the Iowa medical service plan a success. That it can be made a success, and a growing success, we have no doubt, for there is affirmative precedent from many other states. But the wholehearted, harmonious cooperation of every Iowa physician must be forthcoming in order to demonstrate conclusively that private enterprise can be organized to meet the demands of changing socioeconomic conditions among our people. Let us not permit the forest to be obscured by the trees in our deliberation, and let us not wreck the ship at its launching."

This tells us in few words what motivated the IMS to establish Blue Shield, the two principal reasons being *political* and *economic*.

Let us quickly review the history and phenomenal progress of Blue Shield, and determine, at least to date, the extent to which this plan has fulfilled its intended purpose.

No one can debate the fact that Blue Shield was truly a pioneer in the field of prepayment medical care. Coupled with Blue Cross, it cleared the way for the private insurance carriers, and has provided incentive and competition which have encouraged them to develop high-quality policies.

What has the growth of voluntary health insurance meant to medicine politically? It has been a major factor in the defeat of:

- . . . the Murray-Wagner-Dingell Bill
- . . . the Forand Bill
- . . . and the King-Anderson Bill.

A watered-down version of the last two of these bills is having tough sledding.

Blue Shield and a few insurance carriers, through their programs especially designed for those over 65, have done much to assist organized medicine and its allies in blocking federal legislation that would not be in the public interest. Medicine should be encouraged that Blue Shield and the commercial carriers are constantly increasing and perfecting their offerings.

So much for the political aspects.

Now a look at the economic ones. Table 2 shows that in the year 1952, its sixth year of business in Iowa, Blue Shield had a total enrollment of 392,703

Dr. Scanlon made this presentation at the Fall Conference of Medical Society Officers and other Representatives which the Iowa Medical Society held in Des Moines on September 18, 1963.

TABLE 1
IOWA MEDICAL SERVICE
INCORPORATED APRIL 18, 1945

Original Capital Provided:
\$5,000 from Iowa State Medical Society—Received March 1945; Repaid April 1949
\$21,825 by 873 Participating Physicians, at \$25 Each.
\$13,725 Received in 1945—\$8,100 Received in 1946
Physicians Repaid \$21,825 in July, 1948
Enrollment, December 31, 1946
6,792 Contracts; 13,549 Members
One Plan of Contracts
Surgical Benefits—\$150 Max. Per Procedure
Medical Benefits—20 Days Per Year
Income Service Levels
Single Person \$1,500 Per Year
Family Income \$2,500 Per Year

members. It paid in claims for services rendered to its members, \$2,847,678, and had 2,064 participating physicians.

In 1962, ten years later (Table 3), Blue Shield

TABLE 2
SIX YEARS LATER—DEC. 31, 1952

Enrollment: 156,183 Contracts
392,703 Members
2,064 Participating Physicians
\$2,847,678 Paid for Members' Care
Payments to Physicians \$2,420,526
Payments to Members \$ 427,152
One Plan of Contracts (Revision in 1950)
Surgical Benefits \$200 Max. Per Procedure
Medical Benefits 70 Days Per Confinement
Income Service Levels
Single Person \$2,000 Per Year
Family Income \$3,000 Per Year
Average Benefit of \$.869 Received for Each Member Dollar Invested

had a total enrollment of 717,693 members; paid \$13,523,744 in claims to or on behalf of its members; and had 2,034 participating physicians.

In April, 1963, the House of Delegates of the Iowa Medical Society approved a report submitted by its highly-respected Policy-Evaluation Committee. This report was published in the April, 1963, JOURNAL OF THE IOWA MEDICAL SOCIETY, and thus it was available to all physicians prior to the meetings of the House of Delegates, and it was published again in the July, 1963, JOURNAL. As directed by the House of Delegates, this report has served as the basis for discussing future Blue Shield plans at meetings throughout Iowa this fall.

TABLE 3
TEN YEARS LATER—DEC. 31, 1962

Enrollment: 289,065 Contracts
717,693 Members
2,034 Participating Physicians
\$13,523,744 Paid for Members' Care
Payments to Physicians—\$10,655,334
Payments to Members —\$ 2,868,410
Multiple Plans of Contracts Now Available
13 Basic, with 900 Varieties or Combinations
With or Without Deductibles or Co-Insurance or Diagnostic Benefits.
Income Service Levels
Family \$3,000-\$6,000
Single \$1,800-\$4,000
Average Benefit of \$.918 Received for Each Member Dollar Invested

Very quickly, I want to sum up this report by highlighting the alternatives it contains.

BLUE CHIP PLAN

In reference to the controversial Blue Chip Plan, a decision must be made based on the following considerations:

(1) Should the Blue Chip Plan be maintained on its present basis, i.e., continuing the use of a \$5 unit when applied to the Green Book as the basis for judging usual and customary fees? A "medical community," as defined by the insurance commissioner, is, "a community in that locale wherein two or more physicians or surgeons are rendering the same type of service."

TABLE 4
BLUE SHIELD PAYMENTS

	Amounts Paid to Physicians	Amounts Paid to Members	Total Paid for Members' Care
1958	\$ 7,410,171	\$1,037,316	\$ 8,447,487
1959	9,017,054	1,690,561	10,707,615
1960	9,272,795	2,418,700	11,691,495
1961	9,571,340	2,574,600	12,145,940
1962	10,655,334	2,868,410	13,523,744

TABLE 5
AMOUNTS PAID BY TYPE BENEFITS, 1962

	Amounts	Percentage
Surgery	\$5,145,784	38.05%
Pathology	2,601,968	19.24%
Radiology	2,374,769	17.56%
Medical	1,898,734	14.04%
Maternity	897,977	6.64%
Anesthesia	604,511	4.47%

- (2) Should efforts be made to modify the Blue Chip contract to permit the compensation of participating physicians on the basis of their own usual and equitable fees, as determined by county committees?
- (3) Should the Blue Chip Plan be abandoned, and in its place should a high-level-income, full-service plan be established, with an appropriate co-efficient applicable to the latest edition of the IOWA RELATIVE VALUE INDEX?

TABLE 6

1962—HEALTH INSURANCE IN THE UNITED STATES

76% of the Civilian Population or Approximately 141,151,000 Persons With Some Form of Health Insurance	
Hospital Expenses:	No. of Persons
Insurance Companies . . .	85,174,000
Blue Cross-Blue Shield . .	60,280,000
Other Plans	6,993,000
Duplications of Coverage	— 11,296,000
	141,151,000
Surgical Expenses:	
Insurance Companies . . .	81,983,000
Blue Cross-Blue Shield . .	51,769,000
Other Plans	8,241,000
Duplications of Coverage	— 10,808,000
	131,185,000

Personally, I am very much in favor of preserving the usual and customary fee approach, *if* ways and means can be found to enable Blue Shield to live with it, for as I see it, if this approach is abandoned, medicine will have lost its final opportunity to control and govern itself. But, if it is to control and govern itself, then certain sacrifices may be required. A usual and equitable fee program must include reasonable maximum benefits to protect itself from abuse. Therefore, all of us may have to take a hard look at our charges to ascertain whether or not they are realistic, reasonable and within the general range of charges made by doctors of comparable training and competence—taking into account, of course, geographic location, etc.

As I see it, this is medicine's golden opportunity to make a major move away from the fixed-fee concept.

TABLE 7
BLUE SHIELD PROTECTS PEOPLE

MARCH 31, 1963
United States—48,435,713
Iowa—719,220
25.82% of Iowans

In administering the present Blue Chip Plan, we have used a state Blue Shield committee to assist in adjudicating difficult claims. It would seem that if we are diligently to pursue this course of usual, customary fees, we must rely initially on a committee of the Iowa Medical Society to screen unusual cases, and when necessary we shall have to rely on local medical units to judge the reasonableness of physicians' charges. Members from the Blue Shield Board will have to acquaint the IMS committee with the type of policy involved and the legal interpretation, if any, of its provisions. I know that the appointment of local claims committees was recommended when the Iowa Blue Chip program was first started, and that the idea was discarded because the mechanism appeared to be too cumbersome. Whether we like it or not, if we are going to protect and preserve our basic right and privilege to charge what we individually consider a fair fee, we must tolerate and cooperate in what we may regard as many cumbersome details, and we must make up our minds to take the time to police our own colleagues.

Because of the difficulties with the Blue Chip Plan, I've been inclined to favor higher level service income programs, but after carefully considering the long-range effect of adding another fixed fee schedule to those that already exist, I've concluded that to do so would merely be to compound medicine's present problems. However, you doctors, and you alone, must decide the course you wish to follow, since whether you like it or not, prepaid medical insurance is here to stay, and rightly so. Enough about Blue Chip.

WITHDRAWAL OF SOME TYPES OF CONTRACT

- In order to be competitive, Blue Shield must be flexible and must be able to offer a variety of contracts. We also know that in the interest of economy, it would serve a useful purpose to eliminate the multiplicity of contracts, in so far as possible. A reduction in the offerings (Table 8) would make possible the following:
- . . . improved understanding of the contracts
 - . . . lower administrative costs presently incurred both by doctors and by Blue Shield
 - . . . eventual reduction of cost or extension of coverage, to the benefit of the member.

Most of you are aware that Blue Shield now offers special contracts to federal employees and national accounts. These contracts provide high-level (\$6,000) full service income for a family, or a low-level (\$4,000) service income for a family. Current figures on individual incomes for Iowans indicate that these family income levels must be considered modest. Thus Blue Shield is fulfilling the concept of its founders—that it should provide assistance in the payment of medical bills for those least able to pay full fees.

TABLE 8
CURRENT PLANS OF CONTRACTS IN EFFECT
AUGUST, 1963

Type Plan	Contracts	Members	Family Income Service Levels
A-250*	66,071	152,952	\$3,600.00
B-300*	116,239	294,474	\$3,600.00
B-300G	3,266	9,980	\$4,000.00
B-400*	46,193	116,910	\$5,400.00
B-450	9,586	29,900	\$6,000.00
? Blue Chip	14,948	38,706	{ Service with- out regard to income
XL	26,280	67,088	
Senior-65	9,394	9,394	\$3,000.00
		114	\$4,000.00
Diagnostic Endorsement	8,289	23,209	Same as basic contract

* Proposed for elimination. See text.

We are also offering a standard contract that has a single service income level at \$2,600; \$4,500 for two persons; and \$5,400 for a family. I'd like the physicians of Iowa to give serious consideration to abandoning the standard program at the lower levels, and instead to endorse the income provisions that are now applied to the federal-employee and national-account plans, with the understanding that the higher fees would also be paid. This would make it possible to eliminate the present B400 contract in favor of the B450; and the present B300 contract in favor of the B300 G.

We are also offering two plans for senior citizens. One is the original Senior-65 Plan, developed in 1959, and the other is a program designed to coincide with a national program of more recent vintage. Under the original Senior-65 Plan, the service income levels were "\$2,000-single and \$3,000-two person, with net worth limits of \$20,000 and \$30,000 respectively."

Our counterpart of the national program has service income levels of \$2,500-single and \$4,000-two person, and does not include a net-worth clause. I would recommend discontinuance of the original Senior-65 Plan in favor of the more recent program, but including some provision for net worth.

CHANGES ALREADY UNDER WAY

A major objective of Blue Shield is to move all of its programs into the latest edition of the RELATIVE VALUE INDEX (Green Book) as rapidly as is fiscally possible. Furthermore, we are removing the old A250 contract from sale as rapidly as circumstances will permit.

The major question that now confronts us is

where would we like Blue Shield to be five or ten years hence? We know that if Blue Shield is to prosper, it must be progressive, and its benefits must keep pace with advances in modern medicine.

Thus there must be new and improved methods for insuring a greater segment of the medical man's practice—the general practitioner's, the internist's, the pediatrician's, etc.—and extension of coverage to ambulatory and nursing home patients. Perhaps these innovations or additions will require patient participation in the cost, in order to establish some control.

We have designed a major medical plan which is, or should be, available very soon.

CONCLUSION

In early 1962, I was asked by the Blue Shield Board to assume the chairmanship because the other members felt that I would be able to clear up some misunderstandings which had arisen between Blue Shield and the IMS. I am, therefore, completely dedicated to the solving of that problem. *First*, I wish to point out that if Blue Shield is to be successful, it needs the support of every individual physician as well as all the officers of the IMS; and on the other hand, the IMS must keep Blue Shield informed of the Policy-Evaluation Committee's requests, prior to the annual House of Delegates' meeting, so the two organizations can have adequate time to correlate their thinking to further their mutual interests. Without this type of cooperation, my mission will be a dismal failure, and our thousands of policyholders are the ones who will suffer. This, my friends, neither organization can let happen.

We are mindful of the fact that Blue Shield must maintain its identity and its independence from Blue Cross, and this consideration is always in our thinking as we engage in many necessary joint ventures. Blue Cross and Blue Shield need each other, but only as long as mutual respect and cooperation are maintained.

We ask you to ponder the significance of these many problems and then to submit your views to the Society's Policy-Evaluation Committee. Send copies of your conclusions to the officers and Board of Directors of Blue Shield. The Policy-Evaluation Committee's report undoubtedly will be disseminated to all members of the Society and sent to the Blue Shield Board in advance of the 1964 IMS Annual Meeting. In the event you fail to submit your conclusions before the preparation of the Committee report, then please, by all means, study the final recommendations of the Policy-Evaluation Committee, and inform your members of the House of Delegates regarding your feelings.

Blue Shield is grateful to the Iowa Medical Society for all of the assistance it has provided to Blue Shield over the years.



Scientific Articles

Drugs and Drug Addiction

SIDNEY L. SANDS, M.D.

Des Moines

INTRODUCTION

FROM TIME IMMEMORIAL man has chewed, eaten, drunk, smoked, or injected a variety of substances into his body for purposes which are neither nutritional nor, strictly speaking, medicinal. From the crude preparations of primitive man to the highly refined and chemically pure drugs of today, we have available an enormous inventory of substances having properties manifestly desired by the majority of people throughout the world. The list includes sedatives, tranquilizers, analgesics, intoxicants and hallucinogens. These may be regarded with anything from revulsion to reverence, depending upon the culture or the individual, and the uses to which they are put vary from the meticulously prescribed purposes of the conscientious physician to the ceremonial practices of a church or tribe, and, from the innocent self-prescription of "little old ladies" to the desperate demand of the confirmed addict. The issues become further complicated by capricious and often cruel inconsistencies in our attitudes toward both drugs and the users thereof. As physicians, we often exercise rigid medical and moral scruples in regard to some drugs, and yet at the same time we dispense, almost casually, or condone the usage of drugs more deadly than those we have so carefully judged and controlled. We have also been guilty of damning those who use one drug, and accepting the users of others having more dangerous effects.

Dr. Sands made this presentation at the quarterly staff meeting of the Broadlawns Polk County Hospital, in Des Moines, on July 11, 1963.

Because of these inconsistencies and an alarming increase in the problems associated with drugs and drug addiction, an effort will be made in the body of this paper to provide an overview which may sharpen our perspectives and, perhaps, enable us to deal more wisely with our responsibilities in this matter.

PSYCHOLOGICAL FACTORS

There can be no comprehension of addiction without a sensitive awareness of certain universal characteristics in human nature. All of us have the capacity to feel pain, to comprehend danger, to know doubt, and sense the tragic in the inevitable sequence of birth, life and death. Paleolithic man and the most sophisticated cosmopolite share these. Even the newborn infant, out of the trauma of birth, experiences the rudimentary forms of such psychophysiologic reactions. Fear and anxiety drive us relentlessly to seek mastery of our environment and of ourselves, and to find relief from the tensions arising in the course of the struggle.

Primitive man chewed or ingested a variety of roots, berries, or leaves which he found to have certain "magical" properties. Some increased his tolerance of pain. Some intoxicated his senses. Some lulled him to sleep or gave him visions. Whatever their special effects, they gave him a measure of relief from tension, and perhaps some moments of courage or joy in the face of a harsh and stark reality. The use of these crude drugs became incorporated into the social and religious customs of the groups, and thus gained sanction and "justification."

We are no different from our primitive ancestors, no matter how much we rationalize our own motives on quasi-scientific or ritualistic grounds. We all want to be free of painful tensions and the cares of the day. We all want to be able to abandon our concern for tomorrow and to free ourselves from the restrictions of social and personal con-

science. We want to enjoy life and to evade awareness of the caprices of fate and fortune which at any moment can injure or destroy us. The bright promise of relief is offered us by a wide variety of liquids, tablets, powders and vapors, and all of us, at some time or other, have employed them. Some among us cannot easily disengage ourselves from the arms of our special temptress, and addiction results. Suffice it for the moment that we take cognizance of that which in our nature can make cowards of us all and which, through the generations of man, has found relief in drugs.

THE DRUGS

In the minds of most of us, drug addiction is automatically associated with the so-called narcotics. However, there are other drugs which also possess addictive potentials, and some of them are credited with effects they do not in truth produce. A few will be discussed briefly, and they should be understood because of the growing likelihood that we may see more and more "addicts" of various types in our practices.

According to most authorities, the term *narcotic* should be restricted to only two classes of drugs: 1) opium and opium derivatives, and 2) synthetic preparations related to the opium derivatives. The narcotic qualities of opium were known to the ancients, and we today are familiar with the powdered opium, laudanum and paregoric, as well as morphine, heroin and codeine.

Of the synthetics, the most widely used in this country are Demerol and Methadone. These and other synthetics are the results of efforts to obtain effective analgesics free of the addictive effects of morphine. Unfortunately, the first enthusiastic acceptance of these products has had to be drastically modified, for we have found ourselves with a new group of addicts.

The narcotic addict may have his or her favorite drug among these two groups, but heroin is the most widely used today. Sophisticated addicts prefer its effects to those of the other narcotics. The euphoriant and tension-relieving qualities are much desired, and heroin is less likely to produce drowsiness and lethargy than is morphine in controlled dosages.

We must now consider a series of drugs which have a wide range of effects and are at times confused with the narcotics as far as their physiological or social consequences are concerned.

1. *Hemp*. Varieties of this plant are distributed widely around the world. Two forms, *Cannibus Indica* and *Cannibus Americana*, are the source of hashish (and related substances) and marijuana. Popular as well as some scientific literature has created a mental picture of the users of these drugs which obscures our understanding of the problems involved. These preparations are not addictive and, as far as is known, have no destructive effects on tissues of the body. Users of the drugs report a variety of euphoriant states and distortions in time-sense. Social misbehavior, in-

volving hostile-aggressive acts and/or sexual promiscuity or deviation, is less a direct effect of the drugs than it is a facilitation of already established character traits. Crimes of violence may occur under the influence of these drugs, but not because the drugs specifically arouse such desires. In the case of marijuana, the effects can vary widely, and often depend upon the expectations of the user or the group. Suggestion thus plays a role in the picture, affecting not only the behavior of the user but also our "image" of him.

2. *Erythroxylon Coca*. From this plant, the principal alkaloid of interest is *Cocaine*. Medical use of Cocaine has diminished as more effective topical and local anesthetic agents have been developed. Cocaine addiction itself has declined because its effects are not easily controlled and may involve frightening hallucinations. At one time, physicians and nurses comprised a surprisingly large segment of regular users of Cocaine. In controlled dosages, it produces some measure of tranquility, and on withdrawal it causes drowsiness and lethargy.

3. *Peyote*. The pyott plant, from which the crude peyote is obtained, yields ten alkaloids having a variety of intoxicant and hallucinogenic effects. Of these, the principal ones are *Mescaline* and *Psilocybin*. The former is the most active and effective one known. Its use in religious rituals among certain Indian tribes goes far back in time and is practiced today, though not without considerable controversy in certain legal and judicial circles. Related to Mescaline is d-Lysergic Acid Diethylamide Tartrate (LSD-25), a psychotomimetic drug being used in the study of certain psychiatric phenomena. Both Mescaline and LSD-25 are regarded by some as capable of enlarging and intensifying man's vision of himself and his universe. Others regard the use of these drugs as dangerous if not immoral. Much remains to be learned about these exotic drugs, and fortunately they have not achieved "popularity" as yet. However, because of publicity given to these substances, they are bound to be "discovered" by people who, in response to their own needs, will "try them out" and add both confusion and new problems for which we must be prepared.

4. *Mescal*. This plant yields Mescaline, already mentioned.

5. *Mushrooms*. Many varieties of mushroom contain alkaloids having intoxicant and hallucinogenic properties. These are not widely known in this country, but in certain areas of the world varieties have been grown which are utilized in the conduct of religious and quasi-religious ceremonials.

The above do not exhaust the list of drugs or plants possessing properties of the kind described, but those mentioned are the ones which arouse not only interest but controversy, over the world. The users of these substances, along with the users of the narcotic drugs, tend to be viewed as evil, depraved, or, at the very least, barbaric. The cream of the ironic jest is the bitter fact that two

substances are excluded from this list, as if by common consent, which in their chemical, psychological and social effects must be ranked among the most dangerous drugs available to man. These are *alcohol* and the *barbiturates*. In contrast to the substances listed above, these are true tissue toxins. The evidence is well known to every physician, yet it is strangely necessary that we remind ourselves that in many people the indiscriminate use of alcohol or barbiturates produces organic brain disease, causes deterioration of social values and behavior, contributes heavily to the crime and accident rates of this nation, and constitutes a public health problem of staggering proportions. It may therefore come as a surprise to many to discover certain now-established facts about narcotics and associated drugs as they contrast with those so widely and freely dispensed and so socially acceptable as the two just mentioned.

NARCOTIC ADDICTION

However easily we employ the term *addiction*, we are not always precise in our usage, and there is no universal agreement regarding the meaning of the term. In the United States, *addiction* tends to be defined as "the compulsive use of narcotic drugs." Such a definition implies a neurotic component and in its full application views the addiction in psychosomatic terms. Unfortunately, we tend to be less charitable with the addict than we are with our definition of his problem. We have not divorced ourselves from emotionally-loaded attitudes which distort our understanding of the addict, even as we speak learnedly about his condition. In Great Britain, *addiction* is defined in terms of the addict himself. An addict is one who "feels normal" when on narcotics. This simple definition is a most uniquely economical statement of great significance, for it takes cognizance not only of the individual, but of the nature of man. Of this, more will be said later.

Our understanding of addiction must concern itself with two additional phenomena: 1) *tolerance*, and 2) *the abstinence or withdrawal syndrome*.

1. *Tolerance*. Typical of narcotic addiction is the need for increasing dosages to produce the same effects. No studies have yet proved adequately the mechanism of such tolerance. Wikler's theory, that usage of the drug lowers the threshold of excitability of neurones, thus requiring larger doses to raise the threshold to "normal," remains the most likely explanation, but it is as yet a theory.

2. *The abstinence or withdrawal syndrome*. Also characteristic of narcotic addiction is the development of certain very disturbing signs and symptoms when use of the drug is abruptly interrupted. Typically, there is dilatation of the pupils, twitching of muscles, goose-flesh, thirst, lacrimation, rhinorrhea, yawning and sneezing. Painful cramps may develop and, in severe reactions, profuse sweating, fever, hypertension, vomiting, dehydra-

tion and, though rarely, death. In the hands of a treating physician, there is no justification for the "cold turkey" treatment of narcotic addiction. It is medically unnecessary and inhumane. Some physicians, out of warped morality, will permit these people to suffer great torture, and yet carefully nurse the town drunk with sedatives and vitamins to spare him the misery of a hangover or delirium.

Now let us turn our attention to the effects of narcotics on the addict. For much of our knowledge we are indebted to Dr. Lawrence Kolb, and I also wish to acknowledge the work of Dr. Marie Nyswander—both of whom have added greatly to this writer's understanding of the present subject.

First, it is apparently an established fact that narcotic addicts suffer *no* primary impairment of physical or intellectual functions as a direct consequence of the use of drugs. Long-term users of narcotics show no evidence of organic disease due to the drugs employed. This stands in striking contrast to the effects of alcohol and the barbiturates.

Second, in contrast to popular opinion, narcotics addicts commit fewer crimes of violence than are attributed to them. In those cities having high addiction rates, the *percentage* of crimes of violence in the total of crimes committed is strangely less. Narcotic addicts may often steal to obtain drugs, but they are less prone to violence than is the general population. When they steal, it is generally because of exploitation by "pushers" and their need for increasing amounts of the drug. They steal not for loot or kicks, but out of a desperate need for drugs.

Third, there is a popular belief that the use of narcotics is somehow associated with sexual depravity and perversion. Actually, narcotic addicts have less sex drive than the average person and rarely commit sexual offenses. This too, is in contrast to the users of other drugs or alcohol.

Finally, a word on the long-range course in the life of a narcotics addict. Because of our laws and social attitudes, *we* have created a complex problem. The legal restrictions on the sale and use of narcotics have made the user a criminal and have given to certain other criminal elements a rich field to mine. The drugs are costly and are in the hands of procurers who mercilessly exploit their victims. Thus there are serious social as well as economic problems for the addict. He is an outcast, living in a shadowy and dangerous world. The increasing cost of his addiction leads to a lowering of his standard of living, social isolation, malnutrition, infections, beatings by muggers for whom he is an easy mark, and frequent hospitalization for exposure to the elements. Despite this common course, most addicts at some time or other "cure" themselves. That is to say, most addicts, sensing the dangers, break themselves of their habit. Unfortunately, many relapse, not because the "habit" has overcome them, but because of the same personality and socio-economic factors which made them vulnerable in the first place. The fact of

prior use of drugs undoubtedly facilitates the process of recidivism; it becomes easier to succumb, once chastity has been abandoned, but in the case of narcotics, it is not the tissues which demand the drugs, but the person.

WHO TAKES NARCOTICS?

The effects of any substance introduced into the human body vary with the chemical properties of the material, the amount taken, and the individual person involved. Fortunately for us as physicians, most medications have roughly predictable effects, but we are not unmindful of the fact that different people react differently, and we are constantly alert to such common variants of response as are seen in allergic and idiosyncratic reactions, hyper- and hyporeaction patterns, and those unpredictable and poorly defined reactions which derive from the subjects' psychological reaction to treatment. Those drugs which have their primary effects upon the central nervous system and behavior are among the least predictable, no matter how pure the substances or how clearly defined their chemical properties. The effects of many such substances can be strongly influenced by suggestion, or by the expectations and desires of the users. By the same token, this is in part what causes non-users to regard their opposites as depraved, licentious, criminal and, at the very least, spiritually weak. At times their conclusions are painfully correct, but for the wrong reasons, and as a result, the treatment of such problems is too often approached from the wrong direction.

The effects of drugs, whether they be narcotics, sedatives, tranquilizers or intoxicants, depend in large part on the personality of the user and on his socioeconomic life-situation. Complex stresses acting on a vulnerable personality who is exposed to the temptation of relief from tension through drugs determine not only the use thereof, but the effects as well.

Who takes narcotics? The majority of *known* narcotic addicts come from the socioeconomically-deprived classes. These are not merely "poor" people, but human beings who by virtue of a number of factors are second-class citizens. Because of race or foreign nationality, plus limited education and employable skills, they are crowded into the slums of large cities where a corrosive dehumanization process robs them of dignity and hope. The world as we know it is inaccessible to them, not only economically, but psychologically. If this state of affairs brings out the worst in people, it also elicits a great deal of profoundly arrogant and stupid judgments about such people, thus perpetuating the conditions and reinforcing the very attitudes and behavior patterns which their judges so angrily deplore. It is in these situations that many turn to crime and intoxicants, and some, to narcotics. For the latter, the pain of existence is dulled by the drug, and, the loss of hope occasioned by their status is neutralized by the drug's obliteration of desire.

Lest we grow too comfortable with our own

image, as distinguished from that suggested above, let us remind ourselves that among the more economically fortunate members of society, doctors and nurses comprise a high percentage of known addicts. Others come from all walks of life and include people of great wealth. The "rich" can afford such indulgences, and when they seek "cures," they do so covertly and are often protected from exposure to the law and public opinion by those who treat them. Addicts also come from the great middle class, but it has been said, with some irony, that the members of this class have both middle-class vices and middle-class virtues. Hence the lower rate of addiction. As such, the members of this group eschew excesses of the more exotic types, be they of the spirit or of the flesh, but along with others, they indulge freely in those non-narcotic drugs which, despite their deadly potentials, have gained social acceptance. Adolescents from all classes, unfortunately, are vulnerable to many temptations. Commonly they experiment with that which their elders use freely, namely alcohol. However, they are aware of other substances, and avail themselves of amphetamines, marijuana and other "drugs." They comprise a great potential market for the narcotics peddlers, and these pushers are already working the street. This presents a terribly serious problem and will undoubtedly enlarge the number of addicts in our great middle class.

From a strictly psychodynamic point of view, early writers were tempted to believe that only certain personality types became addicts. As more and more work is being done in this area, however, it is becoming increasingly clear that *no* single psychodynamic constellation is unique in the determination of addiction. Though our official nomenclature defines the addictive personality, we append the label *post hoc*, and primarily to describe an effect. Any human being can become an addict, and a great many of us are addicted to something. A few are addicted to narcotics.

Everybody wants to feel "normal"—to feel free of unpleasant tensions, and to face life and death with relative equanimity. We want to feel confident in our power to master ourselves and enough of our environment so as to feel secure from any serious dangers. Nobody experiences freedom from tension perpetually, and nobody is truly free of fear and frustration, but everybody has some means of dealing with these feelings. It may involve a prayer, hard work, a vacation, a hobby, making love or any of a variety of other tension-relieving acts acceptable to the self and to society. For *most* people this is insufficient, though they may not realize it. For some it may require a pre-prandial drink or a sedative at night. For some it requires anti-spasmodics, anti-acids, tranquilizers and hypo-tensives. Examine the medicine chest and liquor cabinet of any household, and the point is dramatically made. Paradoxically—and the fact bears repeating—many of these substances, improperly used, are more dangerous than narcotics. This is not to recommend narcotics!—

but to face the facts of pharmacology and our often-distorted medicolegal and social concepts.

TREATMENT

What follows is by no means a comprehensive discussion of the therapy of drug addiction. A few brief remarks on the management of withdrawal from various drugs may be of some use:

1. *Morphine and Heroin.* Withdrawal should be gradual. One should start by utilizing the drug employed by the addict, then gradually reducing the dosage, and finally substituting sedatives and tranquilizers. Hydration and nutrition should be maintained. Four to ten days are usually required.

2. *Cocaine.* This may be withdrawn abruptly, but the patient may require daytime stimulants and anti-depressant drugs having stimulant properties.

3. *Amphetamines.* These may be withdrawn abruptly. Anti-depressant drugs are likely to be necessary.

4. *Marijuana.* It may be withdrawn abruptly. Tranquilizers may aid in controlling tensions.

5. *Barbiturates.* Withdrawal must be done very slowly and preferably in a hospital. This can be a very dangerous situation. Four to six weeks should be allowed, with gradual reduction of dosage and substitution of tranquilizers, which must then in turn be gradually eliminated. These people must be checked for possible organic brain damage as well as personality problems, and must be handled by trained professionals.

6. *Alcohol.* The management of alcohol withdrawal itself is familiar to all, but familiarity may at times cause us to relax our alertness to the serious complications which can arise in the course of treatment. These may include psychotic states, brain hemorrhage, liver failure and other profound reactions.

Whatever the drugs may be and however successful the management of the withdrawal process, all addicts are human beings with serious problems. All of them need psychotherapy in some form, and they should be referred for that type of treatment. Not all of them will accept it and not all who do will be "cured," but without it, most will eventually succumb to their tensions and the promise of relief to be obtained from drugs.

CONCLUSION

The proper handling of narcotics and narcotic addicts requires a rethinking of our medicolegal concepts and a revised perspective on human nature. This further requires that, as physicians, we acquire a better understanding of the uses and effects of all drugs employed to relieve tension and ease the pain of existence, whether or not they are available by our prescription.

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Statements Made to American Academy of Pediatrics

At the October 6 meeting of the American Academy of Pediatrics held in Chicago, Dr. Lowell Barr, Jr., a Minnesota pediatrician, stated that a study being conducted showed children suffering with asthma have only a 50-50 chance of outgrowing it. The followup study of 336 asthmatic children which he had made in conjunction with Dr. George G. Logan, of the Mayo Clinic, showed that 48 per cent of the patients who had had asthma as children still had "wheezing" at the time of the survey. The ages of those surveyed ranged from 20 to 42 and, all had been seen at Mayo Clinic between 1935 and 1944. The investigators found a general tendency for males to have less asthma as they get older, but this did not appear to be true for females. However, there were twice as many males as females in their series. The physician said age at the onset of asthma often has been considered a factor in the eventual disappearance of the ailment, but the study showed that the age of onset (before or after five years of age) makes no difference in the eventual outcome.

Dr. Frank H. Douglass, president of the American Academy of Pediatrics, declared that too many women are demanding Caesarean deliveries just to suit their own convenience. Though most Caesareans are justifiable only as emergency surgery, Douglass said that women like the idea of timing their delivery—deciding where and when. Some are afraid of delivery, but have no fear of surgery. These women are not aware that the higher incidence of infant mortality is related to the delivery of underweight and premature babies.

Dr. Harold F. Flanagan, president-elect, stated that the pediatrician's major challenge today is in dealing with problems facing adolescents, such as learning difficulties, school drop-outs and behavior problems. The pediatrician views the whole child in relation to his entire history from the time of birth, and not as an isolated adolescent situation. He knows details of the steady growth that has resulted in the multi-faceted personality of this 13- to 18-year-old.

Practical Cervical Cytology

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MANY PHYSICIANS are weary of papers in the field of cellular pathology or exfoliative cytology. However, questions frequently asked of pathologists indicate that there are yet a few misconceptions about the practical aspects of the subject. Accordingly, the first part of this paper will answer a number of questions posed to us by our colleagues.

QUESTIONS AND ANSWERS

1. *Are both vaginal-pool and cervical specimens necessary?* No, they are not. At our laboratory, we examine all slides submitted to us, but have yet to find suspicious cells in vaginal-pool specimens that failed to appear in cervical material from the same patient. Others who have examined smears from tens of thousands of patients have had the same experience.¹ A single cervical smear is all that is really necessary. Cells in the vaginal pool exhibit more degenerative changes, for they have been longer dissociated from the parent tissue.

2. *What is the proper technic for obtaining an adequate cervical smear?* Since squamous cancer of the cervix begins at the junction of the squamous epithelium of the ectocervix and the columnar epithelium of the endocervix, that is obviously the area from which the specimen should be obtained. The junction usually occurs at the external cervical os, but it may be a short distance proximal or distal to it. Lugol's solution, as used in the Schiller test, will stain glycogen-containing squamous epithelial cells brown, and will leave endocervical cells unstained, if one desires to utilize this technic. As you know, however, the junction can usually be identified easily without this added step.

To obtain an adequate cervical specimen, circumferential scraping of the external os or squamocolumnar junction is essential. The familiar Ayre spatula is often used for this purpose. A broken tongue blade is perfectly adequate. Some physicians get quite satisfactory specimens with an intact tongue blade. Others cut a tongue blade to get a tapered end. Cotton-tipped applicators are inadequate, since scraping of the epithelium is impossible by this means. A wooden—not plastic or

metallic—item should be used for two reasons. First, the roughened wooden edge scrapes the epithelium more efficiently, and second, the specimen clings to the wood but slides off smooth-surfaced objects, and part is lost during the 360-degree scraping procedure.

Next, the spatula or blade is placed on a slide, and the material is transferred by means of a linear or circular motion. Obtaining the specimen usually occasions a small amount of bleeding. This is to be expected.

Almost everyone uses good technic up to this point. The most frequent explanation for a poor smear is the failure to fix the material *immediately*. Artifacts caused by drying make interpretation very difficult.

Ideally, a lubricant should not be used on the speculum, for the lubricating medium does not allow the best staining of the resultant smear preparations. Ideal situations must be compromised in routine practice, we recognize. No douching for 24 hours prior to the obtaining of a specimen is a rule that applies only if vaginal-pool specimens are to be secured.

3. *What type of fixative should be used?* It is not necessary to use the original 50-50 mixture of alcohol and ether. Ether fumes are objectionable to many persons, and it has been determined that 95 per cent ethyl alcohol alone fixes slides equally well. We used to recommend a one-hour immersion fixation time, but most specimens are fixed in less than 15 minutes. Alcohol is inexpensive, and over the years it has proved quite adequate. Some of the other fixatives on the market require one to drop the solution on the slide. Again, this must be done immediately for adequate fixation. This adherent substance must be removed before staining. Fixed specimens may be air-dried and wrapped in smooth-surfaced paper such as wax paper for mailing. Fewer slides are broken in the mails when they are sent in the familiar cylindrical mailing container as opposed to the cytomailer. However, either container is adequate.

4. *How "bad" must a cervix look before a Papanicolaou smear is justified?* This question is still asked occasionally. I can only repeat that we are dealing with a screening procedure, and that it should be done *only on benign-appearing surfaces*. One should biopsy any area in which he suspects malignancy. A Pap. smear of such an area is superfluous and could be misleading.

5. *On whom should a smear be taken, and how often?* This question is a corollary to No. 4. Many

Dr. Baridon made this presentation at the 1963 Annual Meeting of the Iowa Medical Society.

physicians follow the practice of obtaining a smear on all pregnant women at the time of their first prenatal visit, regardless of age, and of obtaining yearly smears on all women 25 years of age or older. Some physicians choose to begin this routine testing program with women at age 30, and others choose 35 years of age as the minimum. Age 25 is not an unreasonable minimum, since most studies involving any significant number of cases show one or more carcinomas discovered then, and an occasional one at an even younger age.

Early in the general experience in cellular pathology, a six-month interval was selected for repeating smear examinations. We now believe yearly cervical smears are adequate, in view of the growth pattern of cervical carcinoma. It has a pre-invasive phase that varies between a few months and many years, the average being about 10 years. It is in the pre-invasive or carcinoma in-situ phase in which a near-100-per-cent cure rate is effected.

6. *Is the cervical smear reliable in detecting adenocarcinoma of the endometrium?* Emphatically no! The cervical smear reliably detects abnormalities in cervical epithelium. It is only fortuitous when cells of a uterine body cancer have been trapped in the cervical mucus plug and are seen. It has been claimed that as many as 60 per cent of uterine body cancers are detected by this means, but no one should expect corporal or even tubal or ovarian cancer cells to show up in such specimens. Cyto detection of corporal lesions is difficult even when the material is obtained directly. Adenocarcinomas of the endometrium almost always produce symptoms indicating curettage prior to the time when they can be detected by cytologic technics.

7. *What do the "class" designations really mean?* The semantics of cervical cancer can result in much confusion, for there are stages, grades and classes. Staging is based on a clinical estimation of the extent of tumor spread. Grading is the result of a histologic estimate of the degree of differentiation. Neither of these estimates of cancer is related to the five Papanicolaou "class" designations, which reflect the examiner's estimate of the possibility of malignancy.

Class I means that no abnormalities are seen.

Class II means that abnormal cells have been noted, but that they are not regarded as suggestive of malignancy. These usually have resulted from inflammatory processes.

Class III means that atypical cells suggestive of malignancy have been noted. Follow-ups should show that one-third to one-half of such patients harbor cancer.

Class IV means that atypical cells that *probably* are derived from a malignancy have been seen. Follow-ups should yield cancers in about three-fourths of such cases.

Class V is roughly equivalent to a histologic diagnosis of cancer. There should be no more false

positives among the slides so classified than among tissue examinations.

To summarize, Classes III, IV and V reflect suspicions of malignancy.

Never treat a patient for cancer on the basis of a Papanicolaou smear. Occasionally, hysterectomies are done on the basis of a Pap. report alone for what turns out to be invasive cervical cancer. This is an unfortunate circumstance, for the patient may be denied the benefits of more adequate surgical or radiation therapy.

8. *What is the proper follow-up for patients having cervical smears of the various classes?* Since a Class I smear is negative, one should merely repeat the examination on such a patient at yearly intervals. Patients with Class II smears, showing abnormalities not suggestive of cancer, probably should have a repeat smear in two or three months. If minor abnormalities are due to inflammation, one would expect a reversion to Class I following proper therapy. If they are due to premalignant changes, the classification will ultimately increase to III, IV or V. No surgical procedures are indicated in following Class II patients—only repeat smears. Certain radiation changes are usually considered Class II. Radiation effects are sometimes confused with changes associated with malignancy if a radiation history has not been given.

Patients with suspicious smears—i.e., Classes III, IV and V—should have cold cervical conization, and that procedure should be followed—not preceded—by a dilatation and curettage. Cauterized cervical tissue is so distorted that adequate histologic evaluation is almost impossible. Cervical dilators may rub off areas of pre-invasive carcinoma, since the cells of such a lesion are less firmly bound to one another and to the subjacent stroma than are normal squamous epithelial cells.

The cone specimen does not need to be thick, but it must include the entire squamocolumnar junction. Our processing routine is to divide the cone into about 12 portions and to take sections at three or four levels of each portion, giving us semi-serial sections from at least 36 levels around the squamocolumnar junction. Occasionally, cancer is found at very few of these levels, substantiating the contention that the four-quadrant biopsy is clearly inadequate. Punch biopsies are difficult to orient properly for embedding and sectioning, whereas segments of a cone are properly oriented quite easily. I realize that we are suggesting a hospital rather than an office procedure, but we feel this is necessary to the obtaining of an adequate specimen. In a recent case, after a suspicious Pap. smear from a benign-appearing cervix, four-quadrant biopsy revealed an area of dysplasia. We suggested a cone for more adequate evaluation, and examination of the cone revealed an invasive carcinoma.

9. *Is it true that cancer of the cervix does not occur in pregnancy?* For a time, it was taught that pre-invasive carcinoma of the cervix was a revers-

ible lesion in pregnancy, but more recent writers deny the reversibility of a true carcinoma. For example, Marsh and Fitzgerald have said, "Lesions found in pregnancy which most experienced observers would be willing to call in-situ carcinoma of the cervix persist post partum."² The erroneous concept that cancer of the cervix does not occur at all in pregnancy stems from the finding of reversible dysplasias of the cervical epithelium in pregnant women. Non-pregnant women also exhibit these same changes, only less frequently. Admittedly, borderline cases are difficult to diagnose. This is also true in the non-pregnant state. One of our recent pre-invasive cancers of the cervix diagnosed in pregnancy was found to persist six months postpartum.

10. "I've taken nearly 100 Pap. smears, and they have all been negative. What's the point of doing the test?" The cancer pick-up rate is about eight per 1,000 on initial smears, and on yearly repeats the pick-up rate drops to about two per 1,000. One shouldn't be discouraged about a run of negative reports, nor should one overrate the incidence of the disease. The important thing to remember is that deaths due to cancer of the cervix can be virtually eliminated by yearly smear examinations.

11. *How prevalent is cancer in women?* This question naturally follows the preceding one. In each of the past five years, more than 2,000 Iowa women have died of cancer.³ In this period, the cervical-cancer death rate has not diminished significantly, and consequently there is a need for a further expansion of routine Papanicolaou screening to get a significant number—if not all—of our women screened yearly.

12. *How common are false negatives?* They are very rare. It has been estimated—but of course it can't be proved—that between 50 and 100 unsuspected cervical cancers are discovered for every one that is missed. There are three general ways in which false negatives come about: (1) improper preparation of the smear or inaccessibility of the lesion, as for example high in the endocervical canal; (2) incorrectly interpreting atypical cells; and (3) overlooking cancer cells actually present in the smear.⁴

So much for questions and answers.

RESULTS IN AN IOWA SERIES OF PAPANICOLAOU SMEARS

The following tables depict our experience with 30,000 consecutive cervical Pap. smears received from many parts of Iowa. In Table 1, note that we found 254, 74 and 28 of the smears belonged in Classes III, IV and V, the suspicious groups. Of these 356 cases, tissue follow-ups were available in 327 cases (92 per cent). Only 29 cases were lost.

Of the cases in Class III that were followed by tissue studies, 69 were found to have carcinoma in-situ of the cervix; 15 had invasive cervical cancer; 4 had adenocarcinomas of the uterine corpus; and

TABLE 1
SUSPICIOUS SMEARS IN CERVICAL PAP CASES

Class	Smears			
	3	4	5	
Cases	254	74	28	356
Followed	231	68	28	327
Sq Ca, Cerv				
In-situ	69	34	12	115
Invasive	15	18	14	47
Other Ca	5	2	1	8
	89	54	27	170

170 in 327 = 52.0%

170 + 15 = 185 probable ca

1 had recurrent carcinoma in a rectovaginal fistula. These made a total of 89 malignancies.

The Class IV's that were followed yielded 34 in-situ cases, 15 invasive cervical cancers, and 2 corporal adenocarcinomas, for a total of 54 malignancies.

Finally, the Class V's. Twelve patients had in-situ carcinomas; 14 had invasives of the cervix; and 1 had a corporal adenocarcinoma. Thus the total malignancies for this class was 27, and the grand total of malignancies in our series was 170.

The 170 cancer pick-ups among 327 suspicious cases followed by tissue studies represent the finding of 52 per cent cancers in the suspicious group. Thus we are not subjecting excessive numbers of women to conizations and D&C's, if all suspicious cases are thus handled.

Since there is no reason to presume that the lost cases wouldn't or didn't yield the same proportion of cancers, we presume an additional 15 cases are present in the patients whom we didn't succeed in following. Thus the presumptive grand total for the series studied is 185, and the case pick-up rate is 6.2 per 1,000. This rate was to be expected, since the series consisted of between 60 and 80 per cent first smears, on which the pick-up rate is usually about 8 per 1,000 as compared with about 2 per 1,000 on repeats. The 356 suspicious cases represent 11.9 per 1,000, or a 1.2 per cent suspect rate.

TABLE 2
PICKUP AND SUSPECT RATES

185 cancers from 30,000 examinations = 6.2/1,000 pickup rate (0.6%)
356 suspicious cases from 30,000 examinations = 11.9/1,000 suspect rate (1.2%)

In our experience, 52 per cent of patients with suspicious Pap. smears have been found to have cancer, as we have shown.

Table 3 shows a breakdown by classes. There were 89 cancers in the 231 Class III patients followed, or 38.5 per cent. There were 54 cancers in the 68 Class IV's, or 79.5 per cent, and there were 27 cancers in the 28 Class V patients, or 96.5 per cent.

TABLE 3
CANCERS FOUND IN SUSPICIOUS CASES

Smear	Cases	Cancer
Class 3	231	89—38.5%
Class 4	68	54—79.5%
Class 5	28	27—96.5%

Table 4 shows the age groupings. Of the 157 followed patients with cancer of the cervix, five were under 30 years of age. They represented three per cent of the cancer patients. The under-30 age group accounted for 15 per cent of the total 30,000-case series, indicating as one would expect, that in the younger age group the yield is less than in the middle-age and older groups. Fifty-six patients were in their 30's (36 per cent of the cancers); 43 were in their 40's; and 53 were 50 years of age or over.

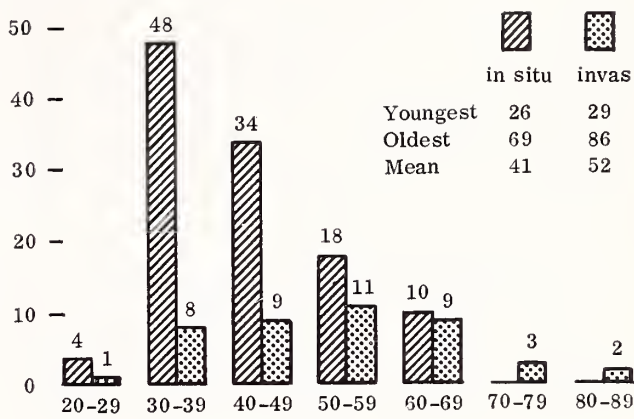
Note that 39 per cent of the cancer pick-ups were under the age of 40, and take notice particularly that one patient under the age of 30 had invasive disease, again bearing out the reasonableness of beginning the screening program at age 25.

TABLE 4
AGE DISTRIBUTION
157 PATIENTS WITH CERVICAL CANCER

Age	In Situ	Invasive	Total	Per Cent Sample	Per Cent Series
20-29	4	1	5	3	15
30-39	48	8	56	36	30
40-49	34	9	43	27	25
50-59	18	11	29	19	30
60-69	10	9	19	12	
70-79	0	3	3	2	
80-89	0	2	2	1	
	114	43	157	100	100

It is quite true that the younger patients have predominantly pre-invasive cancer (Figure 1). We found only one invasive cancer in the under-30 group. Eight of the 43 invasive cancers were in patients in their 30's; 9 in patients in their 40's; and 25, or a few more than half, were 50 years of age or older. Note the preponderance of in-situ cancers in patients in the 30's.

AGE DISTRIBUTION
In situ vs invasive ca



In the in-situ group, the youngest patient was 26; the oldest 69. The mean age was 41 years. In the invasive group, the youngest patient was 29; the oldest 86; and the mean age 52 years.

In the 162 patients followed who had cervical cancers, 29 per cent were invasive (Table 5). With more widespread utilization of the Pap. smear technic and with yearly repeats, this percentage will drop nearly to zero.

TABLE 5
KNOWN CERVICAL CARCINOMAS

	Number	Per Cent
In-situ	115	71
Invasive	47	29
	162	100

I might add that over the period covered by this study, more invasive cervical cancers were diagnosed in our laboratory on the basis of surgical material from patients on whom no previous Pap. smears had been made, than in-situ pick-ups that were found by the Pap. technic. All of these invasive lesions had passed through an in-situ phase, during which they could have been discovered by routine Pap. screening. This means simply that we must educate our women to have Pap. smears regularly so that they won't be coming to your offices with symptoms referable to an obvious cervical cancer. They must be made to realize that the Pap. test is a screening procedure done on material from benign-appearing cervixes *before* symptoms appear, so that cancers will be found in the pre-invasive, curable state.

CONCLUSION

In conclusion, let us see what was found in the group of 157 non-cancer patients (Table 6). Endocervical squamous metaplasia, often described as atypical or borderline, was found in 40 per cent of

TABLE 6
PRINCIPAL FINDINGS
157 NON-CANCER PATIENTS

	Number	Per Cent
Squamous Metaplasia	63	40
Cervicitis	48	30
Dysplasia	20	13
Endocervical Hyperplasia	3	2
Leukoplakia	3	2
Negative or not stated	6	4
Follow-up Class I	6	4
Follow-up Class 2	8	5
	157	100

this group; cervicitis with attendant epithelial changes in 30 per cent; dyskeratosis or dysplasia of the squamous epithelium was widespread in 13 per cent, and was found in lesser degrees in many others; hyperplasia of endocervical mucous cells was present in three cases, leukoplakia in three cases, and no abnormalities were found, or none were reported, in six cases. It must be emphasized here that if suspicious cells are seen on smears, yet not found on surgical preparations, the biopsy or its processing must have been inadequate. If the

source of atypical cells is not found, the patient may still harbor a cancer.

In only six cases in which no surgical procedure was undertaken, were follow-up smears considered Class I, presumably because of the clearing of an inflammation or the reversal of an epithelial dysplasia.

In another eight cases, follow-up smears were considered Class II. These women are still "suspect" and should have frequent repeat smears until they revert to Class I or become Class II or more.

I hope this presentation has answered many of your questions. Adequate facilities are available in Iowa for the examination of Pap. smears from your offices, and I encourage you to make full use of this technic.

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Doctors Must Choose

We "talk of many things"—of guidelines and fee schedules, of fiscal agents and social security, of political action committees and socialized medicine—but at no time, or so it seems, do we candidly face certain harsh and impelling facts.

What no one apparently likes to think about is the self-evident fact that living together inevitably brings a gradual erosion of individual liberty. Because of this, the very survival of a free man's way of life requires that we learn to distinguish between what to give and what to retain, what is unessential and what is vital. It is not enough to say that we will yield no further freedom, for the reality of living with others, in communities and as neighbors, has always made this demand upon us. If you are in doubt, try to defy a zoning ordinance or disregard a draft notice.

Like so many others, I wish that we could stop and rest a while, but the pressure of changing circumstances goes on. Our greatest problem is not creeping socialism but rather the creeping course of events. Our greatest danger is not from those within or without government who promote socialism, but rather from those among us who refuse

to acknowledge the passage of time, and persuasively convince others. Our greatest challenge is to choose with wisdom between what liberties can be sacrificed in accommodating to a complex society, and what liberties must be preserved at all costs, no matter the peril.

I know of no living prophets, but a reasonably objective person, with a little luck, can add, and anticipate, and forecast. I believe that the doctors, by failing to read the future, have lost the initiative of leadership in socioeconomic health affairs. And this may be our tragedy, for insofar as man can mold his destiny, those who hold the initiative will prevail.

Don't ask me where it will all end, for that would be prophesy and well beyond my vision. However, I would guess that it will probably lead to a better world. Maybe not. I wouldn't know. But there is one thing I do know: it won't be the same world.

—DANIEL F. CROWLEY, JR., M.D.,
on the president's page of the
October, 1953, *BULLETIN OF THE*
POLK COUNTY MEDICAL SOCIETY

Carcinoma of the Colon: A Review of 87 Patients

Treated at the Veterans Administration Hospital, Iowa City
January, 1953, Through December, 1957

WILLIAM STANFORD, M.D.
and
RICHARD L. LAWTON, M.D.
Iowa City

CARCINOMA OF THE COLON continues to retain a prominent place in the field of medical investigation. Numerous articles have enabled the medical practitioner to understand this disease more fully, and to standardize his methods of management, but controversy still exists. We think it important that one review his own experience periodically and compare it with the observations of others. It is toward this end that this paper is directed.

CASE MATERIAL

All cases of carcinoma of the colon at the Veterans Administration Hospital, Iowa City, between January 1, 1953, and December 31, 1957, were reviewed. Patients in whom the initial operation had been performed elsewhere were excluded from this series, except for cases of decompressive colostomy without resection. Also excluded were persons having a diagnosis of "polyp with premalignant change." For a case to be included, it was necessary that definite adenocarcinoma exist within the polyp.

Within those restrictions, the series consisted of 87 patients with carcinoma of the colon, on whom a total of 88 operations were performed. (One patient had separate resections for two primary neoplasms.) There was 100 per cent follow up. These

From the Surgical Service, Veterans Administration Hospital, and University Hospitals, State University of Iowa, Iowa City.

cases were taken from a total hospital population of 18,988 patients. Of that number, 203 patients were admitted for carcinoma of the colon—a disease incidence of one per cent. Eighty-seven of them were operated upon—an operability rate of 43.3 per cent. All patients were males, and their ages ranged from 23 to 82 years. The median age was 60 years.

TABLE I
AGE GROUPS OF SURGICALLY-TREATED PATIENTS

Age	Number of Cases
20-29	1
30-39	8
40-49	7
50-59	25
60-69	41
70-79	4
80-89	1
	—
	87
Median age: 60 years	

SYMPTOMS

The most frequent presenting symptom (Table 2) was that of rectal bleeding. Abdominal pain, with or without distention, and diarrhea were next in order of frequency. In three patients, the tumor was discovered during evaluation for an unrelated condition.

The most frequent interval between onset of

TABLE 2
PRESENTING SYMPTOMS

Symptoms	Patients	
	Number	Per Cent
1. Rectal bleeding	40	46
2. Abdominal pain—distension	29	33.3
3. Diarrhea	26	29.9
4. Constipation	10	11.5
5. Weakness	6	
6. Nausea and vomiting	4	
7. Alternating constipation and diarrhea	4	
8. Abdominal mass	1	
9. None (found incidentally)	3	

symptoms and hospitalization was from one to two months. However, two patients were admitted on the same day as the onset, and one had had symptoms for 48 months before seeking medical attention.

LOCATION

Most of the tumors occurred within the rectum (49.4 per cent). Tumors of the sigmoid were next most common (26.9 per cent). (See Table 3, category C.) One patient was found to have two separate primaries at the time of initial operation, and another developed a subsequent primary and underwent reoperation.

TABLE 3
PERCENTAGE OF TUMORS IN EACH OF VARIOUS LOCATIONS

	Rectum	Sigmoid	Descending	Transverse	Ascending
A	53.4	18.9	3.7	7.7	16.3
B	59.5	14.9	3.3	11.5	10.8
C	49.4	26.9	no cases	12.3	11.2

(Group A—University of Minnesota; Group B—Lahey Clinic; Group C—Veterans Administration Hospital, Iowa City. See discussion.)

TREATMENT

The majority of patients were treated either by anterior resection (26) or by abdominoperineal resection (29). Right hemicolectomy was the next most frequent operation (12). In six patients with advanced carcinoma, only colostomy and biopsy were carried out (Table 4). Of the total procedures, 70.7 per cent were considered curative by the surgeon at the time of the initial operation.

TABLE 4
OPERATIVE PROCEDURES

Operation	Number
Abdominoperineal resection	29
Anterior resection	26
Right hemicolectomy	12
Other	21
	88

Our operative mortality was 5.7 per cent, and the causes of death are listed in Table 5. A 30-day end-point was utilized in determining the operative mortality.

TABLE 5
OPERATIVE MORTALITIES

Cause	Number
Pulmonary Embolism	1
Suture-line leak, with peritonitis	1
Metastases of tumor	2
Electrolyte imbalance	1
	5

The morbidity rate in our series, after exclusion of the mortalities, was 31.1 per cent. The four most frequent causes of morbidity were (1) urinary retention, (2) bowel obstruction, (3) wound infection and (4) colostomy stricture. The condition responsible for the morbidity was mild in some instances (diarrhea) and severe in others, as in an instance of evisceration. Almost all of these procedures were carried out by resident surgeons under the direction of, or with the assistance of, staff physicians.

TABLE 6
OPERATIVE MORBIDITY

Cause	Number
Urinary retention	6
Bowel obstruction (mechanical)	5
Wound infection	3
Colostomy stricture	3
Ileus	2
Fistulation	2
Wound dehiscence	2
Other	9
	32

PATHOLOGY

All the tumors were adenocarcinomas. As seen in Table 7, the tumor was confined to the bowel wall in 34 of our patients (38.6 per cent). In an additional 15.8 per cent, there was an extension that was limited to pericolic fat. Thus 54.4 per cent of our patients were without nodal involvement.

TABLE 7

EXTENT OF TUMOR AT TIME OF INITIAL RESECTION

Location	Number	Per Cent
Confined to bowel wall	34	38.6
Serosal breakthrough (not in pericolic fat)	7	7.9
Pericolic fat invasion	7	7.9
Regional nodes involved	23	26.1
Widespread metastases	17	19.3

SURVIVAL

The five-year survival rate, excluding operative mortalities, was 48.8 per cent. The five-year survival relative to tumor location revealed that transverse-colon and sigmoid lesions offered the best prognoses. Of those dying within five years of operation, one patient's death was due to a cerebral hemorrhage. In this case the postmortem examination disclosed no evidence of malignancy. Conversely, one patient died seven years postoperatively of a perforated duodenal ulcer. He was found to have a second primary neoplasm in the cecum at autopsy.

DISCUSSION

For purposes of comparison, two large series of cases of carcinoma of the colon at other institutions were selected. They consisted of 1,340 patients at the University of Minnesota, reported upon by Gilbertsen,¹ and 608 patients from the Lahey Clinic, as reported by Swinton.² All cases were accumulated between 1940 and 1955. For convenience, the Minnesota group will hereafter be referred to as "A," the Lahey group as "B," and our group as "C."

There were differences in group composition, and in operability and resectability rates. In both the series seen elsewhere, there were 54 per cent males, as contrasted to our 100 per cent. The median patient ages, however, were comparable (59, 60 and 63 years, respectively).

There was a considerable spread in operability rates. Our low rate of 43.3 per cent reflected the

fact that many of our patients had been operated upon previously and had been referred to the VA Hospital in Iowa City for terminal care. However, it did include the 6.8 per cent of patients with widespread disease in whom only biopsy or biopsy and colostomy were performed. The 98 and 92 per cent operability rates for groups A and B, respectively, included a majority of patients on whom a definite diagnosis had not previously been made, and on whom the reporting institution did the initial evaluation.

Our series compared more favorably with those at the other two institutions as regards extent of disease at the time of the initial operation. Resections were performed in 84 per cent of patients operated upon in group A, in 92.9 per cent of group B, and in 93.2 per cent of group C. The surgeon had thought the procedure curative in 76, 71.2 and 70.7 per cent of cases, respectively. The pathologists hadn't been so optimistic. They had reported tumor localized to bowel or pericolic fat in only 54.5 per cent of cases in series B and in 54.4 per cent of cases in series C.

In neither series A nor series B were data provided relative to presenting symptoms, but we found that 94 per cent of our patients had presented with histories either of rectal bleeding, altered colonic function or abdominal pain. In a previous study, Swinton³ had analyzed 901 cases and had found a 98 per cent incidence of similar symptoms. Both in this series last referred to and in ours, medical evaluations for unrelated conditions had revealed unsuspected neoplasms in two per cent of patients.

The locations of these lesions are important in that most are to be found within the rectum and sigmoid, and can be reached with the sigmoidoscope. In considering the tumor-location data already presented, one must keep in mind the arbitrary limits of the various colonic segments. For our purposes, a point 16 cm. from the anus was considered the junction between the rectum and the sigmoid, and tumors of the hepatic and splenic flexures were combined with those of the transverse colon. (The figures from other institutions noted in Table 3 are consolidations, so that their figures might correspond with ours.) All of the tumors, except for two per cent in group B, were adenocarcinomas.

The operative mortality varied from 5.4 (group A) to 6.2 per cent (group B), and the rate for our series was in between those—5.7 per cent.

Although the percentage of five-year survivals seemed to be dependent upon tumor location, we found that this relationship, in actuality, was not statistically significant. The figures were as follows:

TABLE 8
PERCENTAGES OF FIVE-YEAR SURVIVALS RELATIVE
TO TUMOR LOCATIONS

	Rectum	Sigmoid	Descending	Transverse	Ascending	Overall
A		33.0	37.0	35.2	33.3	32.2
B						44.9
C	40.0	68.2	no cases	50.0	45.4	48.8

The discrepancy in the above survival figures perhaps reflects a greater selectivity in our group. This probably comes about through our 43.3 per cent operability rate, as contrasted with the 98 per cent operability rate in group A.

STATISTICAL ANALYSIS

Besides comparing our group with the above two series, we subjected our data to statistical analysis, using the chi square method. From these calculations, the following conclusions were drawn:

- a. There was no relationship between tumor location and five-year survival.
- b. There was no relationship between tumor location and duration of symptoms.
- c. There was no relationship between duration of symptoms and five-year survival. However, survival became progressively poorer as symptom-duration increased, until a duration of one year was reached. At that point the figures abruptly

TABLE 9
RELATIONSHIP BETWEEN LOCATION OF TUMOR AND
BLEEDING OR NON-BLEEDING

Location of Tumor	Bleeding	Non-Bleeding	Total	Per Cent Bleeding
Rectum	24	20	44	54.5
Sigmoid	13	12	25	52.0
Transverse	1	7	8	12.5
Ascending	0	10	10	00.0
	—	—	—	
Totals	38	49	87	

reversed themselves and survival became better. This probably reflected a slow tumor growth rate in these latter patients.

d. There was a significant relationship between location of the tumor and gross bleeding or non-bleeding. Inspection of the following table indicates that gross bleeding tends to occur most frequently with rectal cancers, less frequently with sigmoid carcinomas, and relatively infrequently with transverse and ascending lesions (Table 9). (N-87) (P less than 0.01)

Several of the results of the above analyses were unexpected. However, the lack of significance may be attributable to the fact that there were too few cases in the series.

Recent trends in surgery of the colon favor increasing the scope of the operation. This increase may take the form of periaortic node dissection, the early isolation and occlusion of the venous drainage, or the use of chemotherapeutic agents either at the time of the operation or in the post-operative period. These principles are currently being applied in Iowa City, but the follow-up period has not yet been sufficient to allow a comparison between the results thus secured and the data presented above.

SUMMARY

The accumulated experience regarding all cases of carcinoma of the colon at the Veterans Administration Hospital, Iowa City, between January 1, 1953, and December 31, 1957, has been presented. These data have been analyzed with reference to two large series reported during comparable times, and as regards statistical levels of significance. In terms of five-year survival and operative mortality, the Iowa City figures compare favorably with the others. The only statistically significant relationship was between bleeding or non-bleeding and tumor location.

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Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 61-YEAR-OLD MAN had been able to do construction labor and had considered himself healthy until 19 months before his entrance to the University Hospitals. Then, while under emotional stress, he developed sudden upper-chest pain that "went from front to back like a knife." This distress was intermittent for about 12 hours, and he then became short of breath and developed a non-productive cough to such a degree that he had to sit up in bed. The chest pain was not of a pleuritic type. He was hospitalized soon afterward, and "sedatives" were administered. Amnesia was present for the next four days of his stay in the hospital. He remained hospitalized for about two weeks, and his convalescence at home extended for an additional month. Sublingual nitroglycerin tablets and pentaerythritol tetranitrate (Peritrate) were prescribed when he was discharged from the hospital.

He went back to work as a laborer, and took the Peritrate for a few months. Shortness of breath and substernal chest pain without radiation occurred during exertion while he was on the job. Once the shortness of breath or chest pain started, he stopped his activity for a few minutes, and the distress passed quite promptly. He did not take the sublingual nitroglycerin on these occasions, for he had understood he should take it for more severe pain than he was having. After the first bout of chest pain, he used two or three pillows at night. He had no history of ankle edema, paroxysmal nocturnal dyspnea, hypertension or wheezing.

Six months before his entrance to the University Hospitals, anorexia developed and was severe for a month. He could provide no explanation for it, but it caused him to lose weight. Gradually his desire to eat improved somewhat, but each time he ate he experienced abdominal pains that were localized, in the beginning, about the umbilicus and in the epigastrium, but shifted during the last two months to his left lower quadrant. The pain came on within several minutes to an hour after a meal, and he described it as colicky.

Gaseousness, with belching, excessive flatus and abdominal distention, seemed to accompany the belly pains.

At about the time that the abdominal pain appeared, he suffered constipation for the first time in his life, and it failed to respond to any of various laxative preparations. He thought the abdominal pains were proportional to the degree of constipation, since relief often occurred, partially at least, with defecation. He had to resort to digital removal of his stools. The character of the stools was not described. He experienced no vomiting or diarrhea.

From the start of the abdominal pain, nocturia occurred two or three times each night. He had no relief from his abdominal symptoms with urination. There were no other genitourinary-tract symptoms.

A few weeks before admission, he had started taking a liquid diet, on his physician's recommendation, and he found that it caused him much less gut distress. Thus he purposely avoided solid foods. His weight had fallen from the usual 165 to 129 lbs.

The remainder of his history was not pertinent.

Physical examination revealed normal vital signs, but the patient appeared chronically ill and wasted. His mood was depressed. A basal-cell carcinoma, 3 mm. in diameter, was present on his right cheek. There was a Grade II harsh, ejection-type systolic murmur in the aortic region, which radiated to the neck. The abdomen was scaphoid and non-tender. No organ enlargement, masses, fecal material or hernia were found. No bruits were audible over the abdomen. The bowel sounds were normal, and other findings in the physical examination were considered normal.

The hemoglobin level was 15.4 Gm. per cent, and the white blood cell count was 9,700/cu. mm., with a normal differential smear. The hematocrit was 48 per cent, and the erythrocyte sedimentation rate was 16 mm./hr. by the Westergren method. There was 2+ proteinuria, but the remainder of the urinalysis plus a Watson-Schwartz qualitative test for porphobilinogen were negative.

The initial stool obtained at rectal examination tested 4+ for occult blood, but three subsequent stools were normal. Purged stools for ova and parasites were negative. The Bromsulfalein test showed three per cent retention in 45 minutes. The serum albumin level was 3.9 and the globulin 3.2 Gm. per cent. The serum cholesterol was 265 mg. per cent. Serum calcium was 11.1 and phosphorus was 3.9 mg. per cent, and alkaline phosphatase was 2.5 units. Two-hour postprandial (capillary) blood sugar was 108 mg. per cent. An oral glucose tolerance test (capillary blood) was abnormal. Fasting sugar was 105, half-hour was 202, one hour was 256, 1½-hour was 342, and two hours was 135 mg. per cent. The serum carotene was 26 micrograms per cent. Fat globules were easily found in a stool smeared with Sudan stain.

The radioactive I_{131} -labeled triolein absorption studies were abnormal. At four hours the blood contained 3.8 per cent of the ingested meal (normal 8.5 ± 1.9 per cent), and the 72-hour stool collection contained 28.5 per cent of the labeled fat (normal less than five per cent). Sigmoidoscopy was normal to 25 cm.

By electrocardiography, myocardial disease was suggested by ST-segment and T-wave abnormalities, but there was no clear evidence of myocardial infarction. Chest roentgenograms, oral cholecystogram, esophagram and barium examination of the colon were all interpreted as normal. Upper gastrointestinal roentgenograms showed "filling of the stomach in an unusual fashion, in that there was a redundancy of the stomach, with evidence of partial volvulus." Gastric peristalsis was normal. One loop of small bowel, presumably in the lower jejunum, was interpreted as showing some edema. Flat and upright roentgenograms of the abdomen were taken during a period of postprandial abdominal pain. Aside from an "irregular density adjacent to the left margin of the lumbar spine at the L-1 level," which the radiologist thought was caused by the superior pole of the left kidney, these roentgenograms contributed no positive information. Intravenous pyelograms showed prompt bilateral function, with a well-defined collecting system on the right and an indeterminate collecting system on the left. A translumbar aortogram showed peripheral attenuation of the superior mesenteric artery. The arteries of the celiac axis and the renal arteries were normal. There was considerable narrowing of the distal aorta, with roughening of its walls, and these changes were also seen in the common iliacs.

An operation was performed.

CLINICAL DISCUSSION

Mr. Richard Cameron, junior ward clerk: We noted that the following studies and values were normal: esophagram, upper gastrointestinal series except for unusual stomach filling, barium enema,

sigmoidoscopy, cholecystogram, Bromsulfalein test and alkaline phosphatase. From these we ruled out gross abnormalities of the small and large intestine, gallbladder and liver. The presence of steatorrhea could suggest one of the intestinal malabsorption syndromes such as non-tropical sprue, but the glucose tolerance test ruled this out with a diabetic-type curve. Therefore, by the process of elimination, we focused our attention on the pancreas and noted three possibilities. The first two are probable, and the third is possible though not probable. They are chronic pancreatitis, carcinoma of the pancreas, probably of the body or tail, and pancreatic calculi, which are rare. All of these can cause pancreatic insufficiency.

In support of chronic pancreatitis are the following facts: The patient had an increased sedimentation rate, an increased oral glucose tolerance test and a high postprandial capillary blood sugar. He had an abnormally high I_{131} triolein test, a low serum carotene, and steatorrhea. He also had obvious weight loss, constipation, belching, and excessive flatus with epigastric and abdominal pain. In chronic pancreatitis the character of the pain is often capricious, and its borders are usually indeterminate. The abnormal filling defect of the stomach could have been caused by direct irritation. The edematous loop of small bowel could have been a result of mesenteric infarction, possibly from an aortic valvular lesion, since he had a previous history of heart disease.

A factor against pancreatitis was the time limit. The patient had had no previous attacks, and also had a rather short history of his disorder. Usually pancreatitis has a longer course. The location of the pain in the lower left abdominal quadrant is unusual. This could have been indicative of abdominal angina, for there was evidence on x-ray of superior mesenteric attenuation.

Our second choice was carcinoma of the pancreas. It would probably manifest the same positive findings. However, in carcinoma of the pancreas the pain is usually dull and boring, and radiates to the back. Also steatorrhea, which this man exhibited, is rare in carcinoma of the pancreas. Furthermore, jaundice is usually seen, though it may not appear in lesions affecting the body or the tail. Often the diagnosis of chronic pancreatitis or carcinoma is solved only by surgical exploration. It would have been helpful to know whether there was a history of alcoholism in this case.

A third choice, pancreatic calculi, should be mentioned, for they may produce the same clinical symptoms.

In summary, our diagnoses are chronic pancreatitis, superior mesenteric artery insufficiency,

atherosclerotic heart disease characterized by angina pectoris with possible myocardial infarction, atherosclerosis of the abdominal aorta and basal-cell carcinoma.

Dr. R. F. Sheets, Internal Medicine: Dr. Eckhardt will discuss the protocol for the staff.

Dr. Richard D. Eckhardt, Internal Medicine: I shall not go into any lengthy differential diagnosis of this patient's problem. I have listed some references on the board, apropos of the condition that I think the patient had,¹⁻⁴ intermittent insufficiency of the superior mesenteric artery. I shall limit my discussion to that condition, and if it develops that he had pancreatic disease, or tumor of the stomach or retroperitoneal area or elsewhere, that will be acceptable to me.

This vigorous worker led an entirely healthy life until overwhelming chest pain suddenly struck him when he was about 59 or 60 years of age. The pain was described as sharp, knife-like, coming on intermittently for 12 hours, and resulting in his hospitalization for two weeks. During his initial hospital stay, he was dyspneic, he coughed a great deal, and he was mentally confused. He returned to work only after a month's convalescence at home.

The dramatic description of his chest pain suggests the possibility of a dissecting aortic aneurysm. However, the absence of a history of hypertension, the absence of roentgen findings of a double-barreled aorta or of physical findings of dissimilarity of the pulses on either side of his body, and his recovery from his initial illness so that he was able to live fairly comfortably for two subsequent years—all of these make me think that a more reasonable diagnosis would be acute myocardial infarction. This left him with mildly disabling angina pectoris. Although angina pectoris suggests coronary artery disease, a dissecting aneurysm could interfere with coronary filling and could also result in coronary insufficiency. Nevertheless, I shall conclude that he probably had a severe heart attack.

After about a year, during which he apparently had some limitation of physical activity, the patient noticed a very unusual onset of severe anorexia, and when he did eat, he found that abdominal pain followed a few minutes to an hour later. This markedly interfered with his eating habits, so that he lost a great deal of weight.

It was because of the intermittent cramping abdominal pain, weight loss and profound constipation that he entered the hospital for study. The physical findings revealed very little, other than showing a cachectic gentleman with auscultatory evidence of calcific aortic stenosis. The roentgen studies were obviously of tremendous importance in this man. Although I am not going to alter my diagnosis at this time, I am most anxious to hear what Dr. VanEpps has to tell us. From the writ-

ten description, it appears these very helpful x-rays were not inconsistent with a diagnosis of vascular insufficiency of the superior mesenteric artery, plus bowel changes that might accompany such a condition.

Dr. VanEpps, will you please give us your interpretation of the films?

Dr. Eugene F. VanEpps, Radiology: I am showing only a portion of the routine films taken for an upper-gastrointestinal series. The first one shows a stream of barium passing into the stomach, the fundus of which is dependent as though a volvulus were present. The subsequent films show the dependent fundus and the elevated body, with barium passing out the duodenal loop into the jejunum. Peristalsis is evident on several of the films. We interpreted the streaming of the barium as due to a twist of the stomach. On the delayed roentgenogram, there is minimal edema of some of the ileal segments, suggesting an alteration in the motor physiology on the basis of a malabsorption syndrome due to mesenteric artery disease.

The aortograms were read as suggesting segmental narrowing due to arteriosclerosis, in spite of the fact that the aorta appears normal distally.

Dr. Eckhardt: Disease syndromes associated with occlusion or thrombosis of the superior mesenteric artery have been recognized for 40 years. The fairly extensive review article by Johnson and Baggenstoss, of the Mayo Clinic,¹ points out that in about half of these individuals, disease of the mesenteric artery is associated with severe heart disease—the result of shock from an acute myocardial infarction, congestive failure or embolic phenomena. An additional one-fourth of the cases have either extensive arteriosclerotic changes in the mesenteric artery or plaques or thrombi in the abdominal aorta, and the condition has extended to occlude the mesenteric artery. The remaining causes of mesenteric-artery occlusive disease are varied, and include conditions such as polyarteritis nodosa, thromboangiitis obliterans and occlusion following abdominal surgical procedures.

The second article² to which I have referred points out that malabsorption is not at all an infrequent accompaniment of disease of the superior mesenteric artery. One can well imagine that vascular insufficiency to the gut would interfere with digestion and absorption of food, and would result in the malabsorption syndrome. It does. This patient had classical laboratory findings of malabsorption. It is of interest that the two cases these authors reported were considerably benefited following surgical procedures that relieved their mesenteric-artery obstruction.

Another syndrome associated with occlusive disease of the superior mesenteric artery is called intermittent mesenteric ischemia, intermittent mes-

enteric claudication, or abdominal angina. A few cases of this very interesting syndrome have been recognized over the past 25 years, and one of them was seen at this hospital and reported by Drs. Sedlacek and Bean.³ Classically, this syndrome results in pain in the abdominal area from 30 to 60 minutes after eating. The pain is often cramping. Patients often resort to frequent and small feedings, and often prefer liquid foods. To avoid pain, they eat very little, and thus lose weight. The S.U.I. patient was found to get considerable relief from leaning forward, or to one side or the other. In other words, these maneuvers appeared to relieve torsion and stretch on his mesenteric artery. The authors thought their patient had a tumor of the pancreas or retroperitoneal area, and of course, the differential diagnosis of the patient whom we are discussing must also have included that possibility.

The last article I have referred to is an excellent discussion of the differential diagnosis of secondary malabsorption syndrome.⁴ Included in the listing is occlusive disease of the superior mesenteric artery.

I should like to make a few comments about certain of this patient's laboratory findings. The serum calcium was mildly elevated. Perhaps a diagnosis of hyperparathyroidism should be entertained in a patient who is constipated and has cramping abdominal pain, and whose serum calcium is greater than 11 mg. per cent. However, the elevation is really not quite high enough to disturb me appreciably, and I shall dismiss it. However, I cannot so readily disregard the distinctly abnormal glucose tolerance test. There are some who do not place a great deal of faith in capillary blood sugar values, and who might say that these results are merely a little beyond normal limits. On the contrary, I think we must consider this definitely abnormal. The reason why we must pay attention to this result is that classically the glucose tolerance curve in malabsorptive states is flat, rather than of the diabetic type. Perhaps our patient had diabetes mellitus! He may have had destructive disease of the pancreas such as tumor or chronic pancreatitis. Furthermore, it is possible that the arterial blood supply to the pancreas was compromised by an occlusive process similar to that which I feel interfered with the blood supply to his small intestinal tract. The take-off of the celiac axis from the aorta appeared quite normal, as Dr. VanEpps pointed out. More distal segments that supply the pancreas might have been compromised, however. The literature records cases in which thrombi or plaques in the aorta have interfered with pancreatic blood supply by occluding the celiac axis and the mesenteric arteries, with resultant necrosis of the pancreas and abnormal glucose tolerance curves. I shall

have to conclude that this man had an abnormal glucose tolerance curve for reasons unclear to me.

In summary, therefore, I think this gentleman had extensive and generalized arteriosclerosis, that he had heart disease manifested by calcific aortic stenosis, as well as by coronary atherosclerosis and angina pectoris, and that he had arteriosclerotic disease of his abdominal aorta which involved his superior mesenteric artery. I hope the surgeons found a remediable condition, and that they were able to do an endarterectomy, remove a plaque, or do some reconstructive procedure to improve the arterial supply to his small bowel. And I trust that this may have benefited both the abdominal angina and the malabsorption syndromes.

Dr. Sheets: Are there any questions?

Audience: Is constipation often seen in this syndrome?

Dr. Eckhardt: Individuals who have occlusive disease of the mesenteric artery may have a very atonic bowel, in which case constipation would be a prominent feature. This may occur with malabsorption, although most patients with the malabsorption syndrome have frequent loose bowel movements. Malabsorption and constipation, therefore, are not mutually exclusive, though there are only a few such cases recorded in the literature. I think that this man certainly should have been explored. If occlusive arterial disease was not found, and if a tumor or some other condition was found instead, I hope the surgeons were able to correct whatever was troubling the patient.

Dr. Sheets: Would you care to say anything about the absorption tests, Dr. Schedl?

Dr. H. Schedl, Internal Medicine: The absorption tests were compatible with small-bowel disease. The d-xylose test measures small-bowel absorptive function. A 25 Gm. dose of d-xylose is taken by mouth, and if it is properly absorbed, the blood level is greater than 20 mg. per cent in two hours, and urine collected during the five-hour period after ingestion contains 6.5 ± 1.2 Gm. of xylose. The urine xylose is the more significant. If there is disease in the small bowel, providing an inadequate absorptive surface, or if the small-intestinal blood supply is inadequate, a normal amount of xylose does not enter the blood, and even if kidney function is good, the kidneys will not excrete a normal amount of xylose.

The five-hour urine, in this case, contained only 2.9 Gm. of xylose—about half of the expected amount. The two-hour blood contained 18.8 mg. per cent, which is just a little bit low. The radioactive triolein test showed poor fat absorption, but that could have been caused by pancreatic disease—i.e., impaired digestion—as well as small-bowel disease with impaired absorption.

Dr. Sheets: Will you tell us what was found at autopsy, Dr. Warner?

Dr. Emory D. Warner, Pathology: This patient did not come to autopsy and all that I have to discuss is the surgical specimen that was removed at operation. For this reason, I can't give you negative findings except to say that we did have a sizeable part of the pancreas which was essentially normal. There was only mild interstitial fibrosis, which is not unusual for a man of the patient's age.

The lesion present in the tissue that was removed was a large carcinoma of the stomach. This mass involved the posterior wall of the stomach as an ill-defined, fungating mass 10 cm. in diameter and extending through the posterior wall into the adjacent tissue. Posterior to it was a mass of matted lymph nodes 4 cm. in diameter. Included with the stomach was an essentially normal spleen and, as I have said, a large segment of essentially normal pancreas. Ten lymph nodes were included, all of which had been almost completely replaced by tumor.

The first slide is of one area of the carcinoma which was fungating, soft, partially necrotic and very mucoid. Histologically, it illustrates ulcerating carcinomas of the stomach with masses of irregular glands formed by neoplastic epithelium scattered about in the stroma, together with a fair number of inflammatory cells.

The next slide perhaps is a more classic picture of carcinoma of the stomach, with irregular glands formed by the invading carcinoma cells as they penetrate the muscularis of the stomach.

The next slide is of another area of the same carcinoma. It shows tumor cells which are goblet cells forming large amounts of mucus. The cells slough off into the lumens of these glands to become a part of the mucus.

Here is another area in which you can see no epithelial cells at all. Strands of collagen represent the supporting stroma. The great bulk—perhaps 99 per cent—of the tissue is nothing but mucus. There were large areas of tumor that resembled this specimen.

Here is another area of the tumor in which there were solid masses of neoplastic cells which were forming no structural pattern—neither cords nor irregular acini. The cells have a much vacuolated cytoplasm, and in places form "signet ring" cells such as this. I show these different areas of the same tumor simply to demonstrate how variable a large carcinoma is likely to be, microscopically, when one looks at different parts of it.

I have had the feeling for a number of years that we are seeing fewer and fewer carcinomas of the stomach, and more and more carcinomas of the large bowel. Vital statistics from the U. S. Public Health Service contain many inaccuracies, as all of you know, but perhaps they are the best overall figures we have. In 1941, of all deaths,

166,000 were due to neoplasms, and 73,000 of those were of the digestive tract. Although there was a sizeable increase in the total number of cancer deaths in 1959, there actually had been more deaths due to gastric cancer in 1941 than there were in 1959. In contrast, there was an appreciable increase in the number of large-bowel cancers between 1941 and 1959.

Coming back to the present case, I can't say that this man had no significant narrowing of the mesenteric artery. I don't know how much of his digestive disturbance was the result of his large gastric carcinoma and how much he may have had in the way of other things as additional complications.

Dr. Sheets: Did you take into consideration that the number of patients seen in 1960 was probably greater than the number seen in 1950?

Dr. Warner: Yes, there was a decrease in the actual number. By this I mean that despite the fact that more people were seen in 1960, there was an actual decrease in the number of gastric cancers found. I was surprised that the decrease was not greater.

Dr. Sheets: Dr. Lawrence, would you like to comment at this time about what you found at operation?

Dr. Montagu S. Lawrence, Surgery: At the time of operation, this patient had very good pulsations in his proximal superior mesenteric artery. We were actually able to see pulsations in the small vessels as they reached the mesenteric border of the bowel, so we do not think that there was a significant obstruction of the superior mesenteric artery grossly. Ordinarily, the surgical lesion of superior mesenteric occlusive disease is located at the origin of the superior mesenteric artery, and there are normal vessels distal to that point, with some post-stenotic dilatation. Lesions that are in the distal mesenteric artery are not surgically correctable, but we were not sure about this patient, even though he had this slightly distal cut-off. We felt he needed exploration, since he did have alterations in his absorption syndrome. I should like to know whether this patient was studied again following operation.

Dr. W. B. Galbraith, Internal Medicine: He was not restudied for malabsorption. He was too ill on each subsequent admission to undergo proper tests.

Dr. Lawrence: We have explored two patients who had occlusive disease of the superior mesenteric artery, and both were found to have this lesion at the time of operation. They had not been studied angiographically prior to surgery. In the first of them, we did an endarterectomy of the superior mesenteric artery, but it later became obstructed, and the patient developed gangrene of the bowel and died. In the second patient, we

THE MOST SIGNIFICANT IN THE BATTLE AGAINST

In many communities efforts to fluoridate public water supplies have met with opposition from people who object, for religious or other personal reasons, to being compelled to take any type of "medication" against their wishes. This opposition is strengthened by those who have no objection to fluoridation itself, but who object to any method which involves compulsion of others and does not allow for individual choice.

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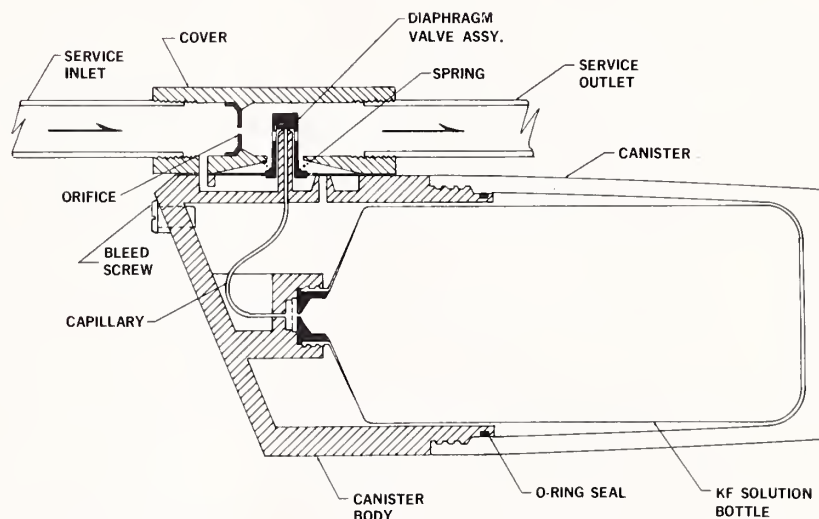
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ED WATER FOR
WITH GROWING CHILDREN

did an endarterectomy of the superior mesenteric artery, but she developed difficulty following that procedure. At the time of operation, we obtained a very good flow of blood. Later, we found that she had a flap of calcium along the wall of the aorta which was acting somewhat like a ball-valve, for although we could get the lumen open and get a good flow, as soon as we took our probe out of the vessel, it closed over. So we did not have a satisfactory distal flow of blood afterward. We operated again on this patient, and ligated the superior mesenteric artery. Then we carried out an end-to-side anastomosis between the distal portion of the superior mesenteric artery and the aorta. The patient developed ileus following the operation, and with resulting tension on the anastomotic line, disruption occurred and she died from massive hemorrhage.

The definitive diagnosis of superior mesenteric occlusion should be made by arteriograms, and such arteriograms probably are best made by using retrograde femoral catheterization, locating the catheter at the level of the superior mesenteric artery, and then injecting dye to determine the occlusive nature of the superior mesenteric artery. Or one might insert a catheter to the same area by way of the left brachial artery. I think that most patients who have superior mesenteric occlusive disease have extensive or additional disease at the bifurcation of the aorta, and may also have occlusive disease at the bifurcation of the common iliac arteries. Therefore, I think that in most patients in whom we have tried to do retrograde catheterization, we have been unable to get a catheter to the desired level because of the obstructive disease. We have relied on translumbar aortography to determine the patency of the superior mesenteric artery.

If we find that a patient has an occlusion of the proximal portion of the superior mesenteric artery, and if we want to reestablish circulation, we can do it one of three ways. The first method would be an endarterectomy, with removal of the obstructive material and repair of the vessel. The second method requires removal of the calcification and then closure of the arteriotomy wound by means of patch angioplasty. A small teardrop piece of plastic material, such as Teflon or Dacron or a segment of the inferior mesenteric vein, is used to close the opening so as to provide a wider anastomosis. There is also a possibility that the occluded vessel might be split and the defect in the artery closed with a patch angioplasty, leaving the calcification, thus forming a new anterior channel for the flow of blood to the distal arterial tree. The third method requires a complete by-pass of the obstruction with a vein graft from the anterior wall of the aorta to the distal superior mesenteric artery. If one didn't wish to use a

vein, he might use a tubular piece of Dacron or Teflon fabric.

I believe that the best results are obtained by using a by-pass graft from the aorta anteriorly to the distal portion of the superior mesenteric artery, leaving the calcification intact. The calcification at the origin of the superior mesenteric artery is somewhat difficult to expose. It is located near the lower border of the pancreas and, since quite frequently the calcification extends into the aorta, it is very difficult to do a successful endarterectomy in this area.

Dr. Sheets: I think we chose this case for CPC because the patient had been well studied, but in spite of all the information that was available about him, and in spite of all the laboratory tests that were done on him, the correct diagnosis was discovered only at operation. I think it would be worthwhile to backtrack now to see whether we can figure out why we went astray. Perhaps by so doing we can avoid making the same mistake again, and we can learn something about the laboratory tests that we must rely on in a great number of instances.

Dr. VanEpps: I'm sure I don't need to tell you of the reliance that clinicians place on radiographic procedures. Using that most valuable of instruments, the retrospectroscope, I must state we missed the diagnosis of carcinoma of the stomach. I have no doubt that a diagnosis could have been made, but somehow there was a significant lack of inquisitiveness, and the body of the stomach was inadequately studied in the lateral roentgenographic projection. In this spot film, there is a mass protruding into the lumen from the posterior wall. The esophogram also shows barium passing around a mass.

As far as the lumbar aortogram is concerned, I would not have read it as indicating any abnormality. The aorta is too smooth, and there is no abrupt narrowing or stenosis of the superior mesenteric artery. The slight narrowing two centimeters distal to its take-off certainly did not produce any problems in terms of total blood flow. Although there are variations in the attenuation pattern of the superior mesenteric artery, I feel that the pattern in this case is normal.

Dr. Jack Layton, Pathology: How would you interpret the band in the stomach that was shown in the x-ray films, Dr. VanEpps?

Dr. VanEpps: I believe it is one side of the neoplasm protruding into the stomach from the posterior wall. Barium is passing around an irregular mass in this supine spot film, and the upright spot film shows irregularity of the gastric outline inferiorly, with air above. This is neoplastic involvement of the stomach and its wall.

Dr. Paul M. Seebohm, Internal Medicine: You have said positively that that is air. How do you know that it isn't due to an absence of barium?

Dr. VanEpps: Air density is less, radiographically, than that of soft tissue, etc. The air density is darker in this film, and the tumor which is here is of a different density.

Dr. Sidney E. Ziffren, Surgery: Isn't it true, Dr. Lawrence, that in almost every instance when a patient has mesenteric artery insufficiency, he has diarrhea?

Dr. Lawrence: I don't know about superior mesenteric artery occlusion, but we have seen inferior mesenteric artery occlusion in nearly every patient who has an abdominal aneurysm.

Dr. Ziffren: What about the patient who, for instance, develops sudden occlusion after aortic resection?

Dr. Lawrence: Dr. Ziffren is asking about a patient who gets into trouble with insufficiency of the large intestine after the sacrifice of his inferior mesenteric and also his internal iliacs. Such people do get diarrhea. It is the first symptom in a patient with vascular insufficiency of the distal colon occurring within the first two or three days following operation.

Audience: Could pressure exerted by this mass have distorted the blood supply?

Dr. Lawrence: I don't think so. The mass was located mainly in the proximal portion of the stomach and to the left. It appeared to be stuck to the pancreas, with a large mass outside of the stomach. The distal portion of the stomach was free. This patient never could get very much into his stomach. He said that he had had trouble swallowing solids, but didn't have trouble with liquids.

Dr. Layton: What was the relation of the four-centimeter mass of lymph nodes to the vessels?

Dr. Lawrence: Right down on the celiac axis. We took everything and left only the right gastric artery.

Dr. Edward E. Mason, Surgery: The attenuation of the vessels in the distal portion might be due to the fact that the patient didn't have much food in his gut, and the blood supply was reduced. The other factor that might explain attenuation would be a reduced blood volume associated with severe weight loss. Often, in patients with cancer and weight loss, the blood pressure is low. What was this man's blood pressure?

Dr. Lawrence: He had good pulsations in the blood vessels around his bowel at the mesenteric border, so I know that he had no obstructive disease. I don't remember what his inferior mesenteric arteries looked like, but he had very good pulsation through his superior mesenteric.

Dr. Galbraith: His blood pressure was 140/100 mm. Hg.

Dr. Sheets: How would you interpret this case, in retrospect, Dr. Galbraith?

Dr. Galbraith: In retrospect, perhaps it was a "bad call." Dr. Lawrence mentioned that the pa-

tient had complained of dysphagia. He complained of it to only one of perhaps half a dozen observers, including a couple of us who spent a long time trying to sort out his many symptoms, trying to determine, among other things, whether he had dysphagia. Dr. James Clifton talked to him carefully, too. I didn't think that dysphagia was a prominent finding. There was a surgical consultant who got this story.

In reviewing his chart now, I certainly think it pays to play "statistical favorites." Still, as best I can put the clinical picture together, I should think mesenteric-artery insufficiency was a good diagnosis, and I think that possibility should have been explored by our surgical colleagues. There were other working diagnoses. Dr. Lawrence, his resident and I had talked about the possibility of other things, including carcinoma of the pancreas. So we felt that he should be explored on that basis.

I should like to give the follow-up on this man, as far as we know it. He has been back in this hospital four times. The first of these occasions was three weeks after surgery. He was doing very well. He was able to eat, he had no pain, he had gained a couple of pounds of weight and was up on his feet, and though he had mild constipation, it wasn't so severe as it had been before surgery. He returned about a week later, however, and had the first of several episodes of deep venous thrombosis, principally involving the calves. He was admitted to the hospital, anticoagulated with heparin, with good responses, and was discharged after a few days. He returned one month later with pain and weakness in both legs and bilateral calf-vein thrombosis. At that time he was also vomiting after each of his meals, and was unable to keep any food down. An upper gastrointestinal series was attempted, and a block was found at the esophageal-antral junction where he had had his anastomosis. It was biopsied and found to consist of "granulation tissue." After many attempts to pass a tube and dilate this stricture, the surgeons finally got it opened a bit and the patient was able to take liquids, but the lumen soon closed off. He came back three months after his operation for his final visit. At that time he was confused, disoriented, flaccid on one side and spastic on the other. It was thought that he had suffered a cerebral-artery thrombosis. He was unable to eat at that time, and was very cachectic. He had hard nodes in the supraclavicular fossa and a rectal shelf. He was sent home to die without further treatment. Because he was unable to eat and was very ill, we didn't repeat absorption studies on him, or do any of the other things that might have helped us to learn whether the operation had made any difference in the preoperative findings of malabsorption.

Dr. Sheets: There is one finding in the protocol to which I think more attention should have been

paid. That was the 4+ positive test for occult blood in the stool, even though it was followed by normal values. We see this discrepancy quite frequently in the charts of patients who have had a number of stool examinations for blood. Bleeding occurs intermittently in patients who have stomach lesions. It may be that they bleed at one time, then stop, and bleed later on.

Another interesting thing, I think, is that even though this man had a fairly large tumor of the stomach, he had a normal hemoglobin. Ordinarily, in patients who have carcinomas of the stomach of this size, there is anemia. It isn't always associated with blood loss, but is caused also by hemolytic effects of the tumor itself on the red blood cells.

Are there any more questions?

Dr. Layton: It is recorded that gastric peristalsis was normal. That seems a little strange in view of the sections Dr. Warner exhibited, showing massive infiltration of the gastric wall by adenocarcinoma. Would Dr. VanEpps care to comment on that?

Dr. VanEpps: I mentioned that peristalsis was present, but it was in the antrum. There was no peristalsis in the two films which showed the lesion adequately.

Dr. Layton: Should that make the roentgenologist suspicious?

Dr. VanEpps: This film should be the tip-off. Now that the discussion is about over, I might state that one of our residents asked the surgeons to be sure to look at the stomach while they were exploring the abdomen. He had a high index of suspicion.

SUMMARY OF PATHOLOGIC FINDINGS

Adenocarcinoma of stomach, with metastases to 10 regional lymph nodes.

STUDENTS' DIAGNOSES

Chronic pancreatitis
Superior mesenteric-artery insufficiency
Arteriosclerotic heart disease, with angina pectoris and possible myocardial infarction
Atherosclerosis of the abdominal aorta
Basal-cell carcinoma

DR. ECKHARDT'S DIAGNOSES

Generalized arteriosclerosis
Calcific aortic stenosis
Coronary atherosclerosis, with angina pectoris
Arteriosclerotic disease of the abdominal aorta, involving the superior mesenteric artery.

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Tapering-Off From Football

At the end of the football season, thousands of young athletes were released from rigorous training schedules. Will they end their training with the season, or will they make their training regimen a pattern for daily living?

Obviously, the football players who wind up the season cannot be expected to keep up the daily hard training grind on their own initiative. But they can be made aware of what happens if they suddenly break off exercise and return to a completely sedentary existence for the winter months.

In a comment issued jointly by the National Federation of State High School Athletic Associations and the Committee on the Medical Aspects of Sports of the American Medical Association, the experts point out that a year-round program of physical conditioning should be advocated for all those interested in athletics. Maintaining strength, endurance and agility makes possible high performance levels and protection against injury. It also reduces the necessity of the trying, early-season period of crash-conditioning.

Of course, in many smaller schools some of the football players will promptly begin playing basketball at the end of the grid season, and their continued training is automatic. The others can help to keep themselves in shape by regular workouts in the school gym, and/or by engaging in any of various indoor winter sports that require considerable activity.

Many football players who halt training abruptly find they are immediately confronted with a sharp increase in weight. This occurs because they continue the heavy calorie diet consumed during the football season. Regular exercise will help to control their weight while they are tapering off somewhat from the training diet.

A training schedule should actually be a comprehensive health education program, covering principles of personal hygiene, first aid, medical and dental care, rest and exercise, communicable disease control, avoidance of environmental hazards, and practice of preventive procedures. These principles are a sound basis for a lifetime "way of life" as well as good preparation for the next football season.



A CHRISTMAS WISH

This is to wish you and your loved ones a very Merry Christmas.

May the true significance of Christmas be a light to illuminate the way for all mankind, to assure equality of opportunity and of justice, to lead men and nations to a peaceful solution of their differences, and to bring serenity of spirit to all people.

NATURALLY!

What would you do if you had a patient referred to you complaining of a recent episode of sudden and severe pain in the epigastrium which caused faintness and a cold sweat, with a residual and persistent epigastric pain? And suppose that this patient had had a KUB, an intravenous pyelogram, stomach and gall bladder x-rays but five weeks before, and the findings all had been negative. Suppose, too, that the physical examination revealed a normal cardiovascular system and only a mild upper abdominal tenderness.

Naturally you would order the routine laboratory tests, a serum amylase, a chest x-ray and a scout film of the abdomen. But what if these were all essentially normal? Well, you might then do a barium enema preceded by a proctoscopic examination, for surely the colon approaches the epigastrium somewhere along the way. Strange things can happen and it wouldn't do to overlook any tests. But what if these revealed no abnormalities except for a few small hemorrhoids?

To compound the problem, suppose that you noticed one day during your morning rounds that the patient was calmly reading the daily newspaper, though he continued to insist on almost constant suffering from the epigastric pain. Well you would doubtless now be in a position where you would have to sit down and take a careful history, and maybe do a little thinking too. But if all this only turned up some rather irrelevant facts and irrelevant thoughts?

We are coming now to the point of the story. Naturally you remember the old adage: "Never operate just for pain." But an adage always seems to be of greatest value after the fact, so adage or no adage, you would be very likely to operate. And what would your pre-operative diagnosis be? Well, naturally, it would have to be something

pretty vague, such as "exploratory laparotomy." And what would you find? A toothpick perforating the stomach wall—naturally!

DANIEL F. CROWLEY, JR., M.D.

THE CELL

Most "oldsters" like to look upon the wonders of the past and to think that today is not quite as wonderful as yesterday. Some "oldsters," however, are able to take a long-range view and realize that in many areas remarkable progress has been made. One such area lies in the field of cellular anatomy and function. Thirty years ago, one studied the cell as a dead thing—something to be seen under the light microscope. "Golgi apparatus," and "mitochondria," were only names to be memorized for the examination. No functional concept was attached to them.

All of a sudden, it seems, in the past five years, the cell has come alive. The electron microscope and the biochemist have made it so. Twenty-five years ago the electron microscope was but an interesting, impractical, cumbersome gadget. Now, with refined photographic technics, it brings to light a whole new world within the cell. Now, names such as endocyttoplasmic reticulum with its ribosomes, mitochondria with its "cristae," lysosomes and lipofuchsin granules are *living* words. These "organelles," as they are called, really function! They, in the ultimate, are what make us go! Pity the doctor who does not bring himself up to date by educating himself as to these newer concepts of cellular structure and function.

When he does begin to study, he will find that by enlarging the cell 30,000 times or more, researchers have discovered intricate new patterns in the cell. The microbiologist has tied many functions onto these "new" structures. Although much remains to be discovered, it is now known that the ribosomes lining the endocyttoplasmic reticulum are the building areas for many enzymes, proteins, and substances such as bilirubin, adrenalin, and ribonucleic acid. The lysosomes destroy or break down proteins by means of their proteolytic enzymes. They also, it seems, transport inorganic materials. The Golgi apparatus may be the "sodium pump," and may be the area for "packaging" protein molecules. The old, inanimate, unimportant mitochondria may take up as much as 70 per cent of the cytoplasmic area. They are the "power stations" of the cell, producing the fuel "ATP" for the "Krebs cycle," and performing 10 or 12 other functions, including respiration of the cell.

The electron microscopists are now examining the cells of different parts of the body to find out, for example, what happens when a cardiac cell contracts, how the "I" band becomes smaller and how the myocardial filaments slide into the "A" band. In the lung they are discovering how the old-time "macrophages" secrete a lipid substance

Editorials continued...

which lowers surface tension of the alveolar wall and permits respiration to occur. In the intestine they are studying the villous cells, with their microvilli, and watching how they absorb and transport certain molecules.

Soon mechanisms of disease processes will be discovered. In alveolar proteinosis, for example, an unusual myelin-lipid figure has been found. Soon we shall be discovering what is happening in diabetes, in the "collagen" diseases and in cancer. These discoveries are on the horizon and will come as surely as the next dawn. Maybe the "good old days" are yet to come!

D. A. GLOMSET, M.D.

MANAGEMENT OF ACCIDENTAL POISONINGS

The accidental ingestion of poisons by children continues to be a common problem to practicing physicians. Reports from poison-control centers list an amazing number of accidental poisonings involving a wide variety of poisonous substances. The list testifies to the curiosity and ingenuity of youngsters, and to the availability of dangerous substances in the average home. The materials include everything from perfume and fingernail polish to lethal poisons such as strichnine and arsenic, but aspirin continues to be the drug most commonly to blame.

The physician who cares for children is obligated to instruct parents concerning the hazards of accidental poisoning and the precautions which they must employ to prevent it. He should do this at the time he talks with them about the prevention of accidental injury, and of burns and scalds. He must imbue a consciousness of these problems without arousing undue fear. Drugs must be kept under lock and key. Cleansing agents, garden sprays, insecticides, turpentine, petroleum products, etc., should also be kept locked up. Placement on a high shelf in the kitchen or in the garage is not enough.

Two recent articles in the pediatric literature offer highly worthwhile and practical suggestions on the management of accidental poisoning. Margolis and Dugger,* of Kalamazoo, had their pharmacist prepare half-ounce bottles of syrup of ipecac, and gave one to the parents of each of their patients. Syrup of ipecac empties the stomach in approximately 16 minutes, and is probably more effective than stomach washing after the accidental ingestion of poison. The trick is to have the syrup of ipecac in the household when the youngster takes the poison, and if such a thing occurs

the parents are instructed to call the physician for the proper dosage. Margolis and Dugger say they continue to have the same number of poisonings—about one a day!—but since introducing syrup of ipecac into the homes, they rarely find it necessary to do gastric lavage.

Emmett Holt, Jr., and Peter Holz, in an article entitled "The Black Bottle"*** urge that a bottle of activated charcoal be placed in every family medicine chest to combat serious poisonings in the home. "Of all the emergency measures," they say, "it is our belief that charcoal is probably the most effective single measure because of its broad spectrum of activity and its exceedingly rapid inactivation of poisons." The charcoal, in the form of a fine powder, is stirred into water to a consistency of thick soup, and the child is urged to drink it. Though the administration of charcoal is not a substitute for gastric lavage, when given promptly in the home, it permits a rapid absorption of many poisons. Furthermore, the mere presence of "The Black Bottle" in the family medicine chest is a constant reminder of the danger of poisoning within the home.

Greater efforts should be made to teach poison prevention. The inclusion of syrup of ipecac and activated charcoal in the family medicine chest can help to avert such incidents and can contribute a measure of serenity to the life of the physician.

THE BEST-QUALIFIED NURSES SHOULD NURSE

"Get back to the patient," was the advice given to nurses at the annual meeting of the Iowa Nurses Association, according to a report in the DES MOINES TRIBUNE of October 28. In the keynote address, Dr. Katherine R. Nelson, assistant professor of nursing education at Columbia University Teachers College, New York City, stated that the registered nurse has been entirely too much concerned with management problems, when her energies and interest should have been directed to the welfare and the actual care of the ill patient.

She asserted that as a consequence of the diversion of the nurse's attention to management and administration, there has been a stratification of nursing care into "levels of nursing." The professional nurse has received the best possible preparation and is capable of assuming wide responsibility; the practical nurse is less well-prepared and qualified only for more limited responsibility; and the nursing aide has been trained "on the job" and is qualified to assume even less responsibility. In consequence, the really well-trained nurse relinquishes the actual patient care to those less well qualified, simply because such an arrangement is handier. "This," Dr. Nelson declared, "may

* Margolis, F. J., and Dugger, J. A.: Instant ipecac. *AM. J. DIS. CHILD.*, 105:220, (Feb.) 1963.

*** Holt, E., Jr., and Holz, P. H.: Black bottle; consideration of role of charcoal in treatment of poisoning in children. *J. PEDIAT.*, 63:306-314, (Aug.) 1963.

appear to be an economy, but actually it is more costly for two poorly prepared persons to do a poor job than for one well prepared person to do a good job."

If the registered nurse is to be freed from administration and returned to the actual care of the patient, a start must be made in the nursing school, she maintained. And she stated that the trend in nursing education is toward interdisciplinary programs that develop professional practice. This will prove better for society and for the individual patient. The educational programs for the health professions must be interdependent, and we must help the student to develop skill in individual patient care.

The medical profession will welcome this change in philosophy, and will anxiously await the day when the best qualified nurses actually take care of patients. All too often, physicians have seen the highly qualified graduate nurse seated at a desk, engaged in administrative duties, while their critically ill patients were being cared for by practical nurses. This waste of nursing talent has been going on all too long.

POSTOPERATIVE GASTROINTESTINAL SUCTION

In a recent article, Dr. Alex Gerber questions the rationale of postoperative gastrointestinal suction, and reports that in a series of more than 2,000 observed patients, no form of gastrointestinal decompression was utilized postoperatively.

According to Dr. Gerber, there is considerable disagreement among physicians concerning the definition of paralytic ileus. In his opinion, paralytic ileus is a physiologic response to peritoneal irritation or a reflex inhibition of peristalsis in such conditions as ureteral colic, retroperitoneal hemorrhage or fracture of a vertebra. A silent abdomen should not be looked upon as a disease entity, but rather as a diagnostic aid and a therapeutic tool. Diagnostically, the absence of peristaltic sounds is as significant as rigidity and localized tenderness in helping the physician to detect a pathologic process within the abdomen. Therapeutically, the cessation of intestinal motility is a physiologic defense mechanism, permitting the localization of an inflammatory process. Postoperatively, it permits fibrin to seal an anastomosis while the intestine is at rest. The California surgeon contends that it is unphysiologic to use cholinergic drugs or other agents to stimulate peristalsis postoperatively, for under such conditions paralytic ileus is desirable.

Though arguing that paralytic ileus is physiologic, Dr. Gerber points out that the accompanying gaseous distention places a strain upon the abdomi-

nal wound, and that elevation of the diaphragm embarrasses cardiac and pulmonary function. There is universal agreement on the desirability of preventing or alleviating postoperative abdominal distention. It was for this reason that nasogastric or gastrostomy suction was introduced and in many quarters has become routine.

Regardless of the method of suction decompression, the aims are accomplished by aspirating fluid and gas from the intestinal tract. The rationale of this procedure needs reassessment, Dr. Gerber contends. The fluid aspirated represents but a small fraction of the 8,500 cc. normally secreted by the gastrointestinal tract. If not aspirated, this fraction would be reabsorbed along with the other intestinal secretions. Experience teaches that postoperative suction, with the loss of the secretions aspirated, complicates the postoperative maintenance of electrolyte and fluid balance. It is difficult, by parenteral replacement, to duplicate the physiologic fluid lost into the drainage bottle.

According to Dr. Gerber, the suction tubes are chiefly concerned with the removal of swallowed air from the stomach. It is in the process of deglutition that air is swallowed, and gaseous distention postoperatively is best prevented by seeing to it that the patient takes nothing by mouth and is fed parenterally. If oral intake is prohibited until the patient becomes hungry or is passing flatus, and until peristaltic sounds are audible, suction decompression is unnecessary. On occasion, if reflex vomiting is troublesome, aspiration of the stomach may be helpful, but this problem is not necessarily related to the distention.

In patients with peritonitis who have extensive abdominal distention, suction decompression is of little value, in the opinion of the author. Past experience has shown that an enterostomy performed in the presence of a silent abdomen decompressed only a single loop of intestine. Similarly, nasogastric suction decompresses a single loop, the stomach. Ordinarily, the fluid in the suction bottle is perfectly clear. As peritonitis subsides under proper therapy, peristalsis is resumed, flatus is passed and abdominal distention is relieved.

There are numerous advantages in treating the postoperative patient without gastric suction. The patient requires less care by the house staff and nurses, and will need one liter less of intravenous fluid each day. The greater comfort of the non-intubated patient and the universal complaints of intubated patients constitute a strong argument against the use of the suction tube. The tube disturbs normal pulmonary physiology because the patient consistently breathes through his mouth. This results in dryness of the mouth and pharynx, and irritation of the respiratory tract. Pulmonary complications are fewer in the patient without gastric suction.

Though tube gastrostomy eliminates some of

* Gerber, A.: Appraisal of paralytic ileus and necessity for postoperative gastrointestinal suction. *SURG., GYNEC. & OBSTET.*, 117:294-296, (Sept.) 1963.

Editorials continued...

the disadvantages of nasogastric suction, it is an additional operative procedure which results in an increased morbidity and mortality. According to Gerber, it is an unnecessary measure.

Unquestionably, many surgeons will take issue with Dr. Gerber's thesis that nasogastric decompression by suction tube is unnecessary in the post-operative patient. It is the prudent physician, however, who reevaluates technics and procedures at intervals, particularly those that have become standard or routine. Does your postoperative patient really need nasogastric suction?

BRITISH AND AMERICAN MEDICAL WRITING

Reading a considerable number of medical journals written in the English language, one is impressed with the quality of the articles published in the British periodicals. The British physicians, in general, appear to have unusual writing facility and to possess a distinctive and readable style. Their articles are characterized by clarity and simplicity. They are written with an economy of words and with pleasing restraint.

The ability of British physicians to write with facility did not come about by accident. Students in the secondary schools and colleges there are taught to write, and examinations of the essay type are in general use. The objective test, in which an "X" must be put in the proper square, is seldom employed, even in courses in the sciences. Thus it is not surprising that British doctors have the ability to write well, for they have been trained to do so.

Apropos of the educational program in this country, Oscar Handlin, a professor of history at Harvard, asserted in the *ATLANTIC* during the past year that the stifling competition for grades nullifies much of what the colleges intend to do for the students. According to Professor Handlin, college students obtain thorough training in the technics of the correct answer, but they are rarely asked to formulate ideas or to speculate about unknowns. He challenges our colleges in strong words: "They [the students] cannot afford the sense of the tentativeness of knowledge, of the imperfections of existing formulations. Writing against the clock, they must always put the cross in the right box and round out the essay with an affirmative conclusion. With what pain, if ever at all, will they learn how to know what they do not know, how to probe alone beyond the limits of what is handed to them, how to be creative original thinkers! By the time they carry their diplomas away, they have missed an education—that experience which, by the exposure of one mind to the thinking of others, creates not answers but a lifetime of questions."

According to the prevailing educational program in this country, the various elements necessary for writing are acquired in successive steps. Spelling and grammar are within the province of the grade school; English composition is taught in the four years of high school; it is only the college student who is expected to acquire facility in expressing his thoughts on paper and to develop an individuality of style. Much greater emphasis must be placed upon the acquisition of basic writing skills at each level of the educational ladder. High schools should not find it necessary to teach spelling and grammar, and colleges should not be forced to teach the fundamentals of composition. Too little writing is required at each level because the correcting of objective tests takes a much shorter time than the correction of essay-type reports and examinations. Improvements in medical writing can be facilitated if writing assignments are included in medical curricula, and if students are encouraged to write more than routine reports.

Federal Grants for Immunization

Surgeon General Luther L. Terry announced on November 7 that Public Health Service Grants totaling \$3.4 million had been issued to 18 state and seven city-county health departments to assist in community immunization campaigns against polio, diphtheria, tetanus and whooping cough. Iowa was one of the states listed as having received a grant.

These subsidies were authorized by the Vaccination Assistance Act of 1962, the goal of which was the immunization of the entire population, with special emphasis on the 14,000,000 children under five years of age in the United States who are not fully protected against those four diseases.

Vaccination Assistance funds may be used to purchase vaccine for children under five, and to support certain other activities connected with immunization campaigns, the HEW Department press release said. State and local health departments now participating in the program are emphasizing community education programs and house-to-house contacts in areas where concentrations of unimmunized children are known to exist. Some states are using the voluntary assistance of home demonstration agents, school teachers, county agents and others to achieve the widest possible public response.

Dr. James L. Goddard, chief of the USPHS Communicable Disease Center, Atlanta, was quoted as saying: "There are some five million children under five who are totally unprotected, and another nine million only partially protected against the four diseases." Public health officials gave two reasons for the existence of millions of unvaccinated children: extreme mobility of American families, and the large numbers of children not under the regular care of a physician or public health clinic.

President's Page



To all of the physicians of Iowa, and to the members of their families, I take this opportunity to wish a very merry Christmas.

C. W. Edwards, Sr.

President

Coming Meetings

IN STATE

- Dec. 1-3 **Association for Research in Ophthalmology**, Iowa City.
- Dec. 3-4 **Surgery**, S.U.I. College of Medicine, Iowa City.
- Dec. 6 **Cardiac and Respiratory Disease Conference**, S.U.I. College of Medicine, Iowa City.
- Jan. 21-22 **Obstetrics and Gynecology**, S.U.I. College of Medicine, Iowa City.

CONTINENTAL U. S.

- Dec. 1-4 **American Medical Association (Clinical Meeting)**, Portland Hilton Hotel and Memorial Coliseum, Portland.
- Dec. 2-6 **Advances in the Medical Aspects of Cancer**, Francis Delafield Hospital, New York, New York.
- Dec. 2-6 **Psychiatry for the Internist**, Los Angeles County General Hospital, Los Angeles.
- Dec. 2-6 **Recent Advances in the Diagnosis and Treatment of Diseases of the Heart and Lungs**, Ambassador Hotel, Los Angeles.
- Dec. 6-7 **Association for Research in Nervous and Mental Diseases**, Roosevelt Hotel, New York City.
- Dec. 6-7 **American Rheumatism Association (interim session)**, Boston.
- Dec. 6-8 **American Psychoanalytic Association**, Commodore Hotel, New York City.
- Dec. 7-8 **International Symposium on Hemophilia**, Sheraton-Park Hotel, Washington, D. C.
- Dec. 8-11 **New Physicians Conference**, Riviera Hotel, Las Vegas.
- Dec. 9-10 **American Society of Hematology**, Statler Hotel, Washington, D. C.
- Dec. 9-13 **Environmental Medicine**, Massachusetts General Hospital, Boston.
- Dec. 10-12 **Southern Surgical Association**, Homestead, Hot Springs, Virginia.
- Dec. 13-14 **Progress in Cancer Detection and Treatment**, University of Nebraska College of Medicine, Omaha.
- Dec. 14-15 **Academy of Psychoanalysis**, Commodore Hotel, New York City.
- Dec. 26-30 **American Association for the Advancement of Science**, Cleveland Hotel, Cleveland.
- Dec. 27-30 **International Convention of Missionary Medicine**, Wheaton, Illinois.
- Jan. 5-8 **Postgraduate Seminar in Anesthesiology**, Eden Roc Hotel, Miami Beach.
- Jan. 6-10 **Nuclear Medicine and Radiation Biology**, University of California Medical Center, Los Angeles.
- Jan. 9-11 **International Heart Meeting**, Hotel Fontainebleau, Miami Beach.
- Jan. 12-18 **Tenth Annual General Practice Review**, University of Colorado School of Medicine, Denver.
- Jan. 13-17 **Recent Advances in the Diagnosis and Treatment of Diseases of the Heart and Lungs**, Hotel Fontainebleau, Miami Beach.
- Jan. 14-16 **Thirteen Cardiacs (Medical College of Georgia and Foundation)**, Augusta.
- Jan. 16-17 **Obstetrics and Gynecology**, University of Nebraska College of Medicine, Omaha.

- Jan. 17-18 **Symposium on Hypertension and Coronary Artery Disease (American Therapeutic Society and Minnesota Heart Association)**, Radisson Hotel, Minneapolis.
- Jan. 18-23 **American Academy of Orthopaedic Surgeons**, Palmer House, Chicago.
- Jan. 20-23 **Cardiovascular Drug Therapy**, Marriott Motor Hotel, Philadelphia.
- Jan. 22-25 **Neurosurgical Society of America**, Wigwam Hotel, Phoenix.
- Jan. 27-29 **Medicine and the Law**, University of Kansas School of Medicine, Kansas City.
- Jan. 27-29 **American College of Surgeons**, Lord Baltimore Hotel, Baltimore.
- Jan. 27-31 **Newer Concepts in Internal Medicine (Co-sponsored by Louisiana State University and Tulane University)**, New Orleans.
- Jan. 30-Feb. 1 **Postgraduate Assembly in San Antonio**, Granada Hotel, San Antonio.

ABROAD

- Dec. 1-7 **Pan American Congress of Pharmacy and Biochemistry**, Mexico. Dir.: George B. Griffenhagen, Division of Communications, American Pharmaceutical Association, 2215 Constitution Ave. NW, Washington 7, D. C.
- Dec. 3-9 **Meetings on Pathological Studies of Atherosclerosis**, Malmo, Sweden. Info: World Health Organization, Palais des Nations, Geneva.
- Dec. 3-9 **Seminar on Immunization in the Control of Communicable Diseases**, Manila. Info: World Health Organization, Regional Committee for the Western Pacific, Box 2932, Manila.



THE JOURNAL *Book Shelf*



BOOK REVIEWS

TEXTBOOK OF MEDICINE, ELEVENTH EDITION, ed. by *Paul B. Beeson, M.D.*, and *Walsh McDermott, M.D.* (Philadelphia, W. B. Saunders Company, 1963. \$19.50 for the single vol., or \$23.50 for the 2-vol. set).

This classical text of medicine enters its eleventh edition with marked improvement in presentation and content. It is remarkable that the editors have been able to include such up to date material in such an undertaking. The chapters on genetics and viral diseases are especially valuable. The style of presentation is still much the same, though a number of new contributors have been added to the roster. The copy reviewed was the single volume (which weighed eight pounds, nine ounces). For a somewhat greater cost, the same text is available in two volumes. This book is highly recommended for any practitioner of medicine, regardless of his specialty.—*M. E. Alberts, M.D.*

THE CARE OF THE RHEUMATOID HAND, by *Adrian E. Flatt, M.D.* (Saint Louis, The C. V. Mosby Company, 1963. \$11.50).

This monograph on the rheumatoid hand is an amplification of the author's Hunterian Lecture before the Royal College of Surgeons of England, in June, 1962. Its stated aim is to present a balanced assessment of the value of conservative and surgical measures in the care of rheumatoid disease of the hand.

The material in this new book is based on experience in the treatment of this disease at the University of Iowa, where the author is associate professor of orthopedic surgery. It also includes his wide knowledge of the present methods of treatment of this disease, as now practiced in the leading clinics of Europe.

Dr. Flatt's lucid style makes the reading of the text a pleasure. The original drawings and clear enlarged photographs (many of which were taken during operations on rheumatoid hands) would be a credit to any textbook.

As far as I am aware, this is the first book in which the possibilities and the limitations of surgical treatment for this crippling disease have been clearly delineated. For this new, up-to-date, "wide angle lens" picture of the rheumatoid hand, we are greatly indebted to the author.—*J. M. Bruner, M.D.*

DISEASES OF THE SKIN, FIFTH EDITION, by *George Clinton Andrews, M.D.*, and *Anthony N. Domonkos, M.D.* (Philadelphia, The W. B. Saunders Company, 1963. \$16.50).

This edition has a new format in which each page is divided into two columns to facilitate ease and speed of reading. It incorporates the late developments in the field of dermatology, with references as recent as

February, 1963. Also included are the newer concepts of anatomy and histology that have been developed with the aid of electron microscopy, and the newer findings with regard to auto-immunity and auto-sensitization. There is a chapter which reveals the advances in the knowledge of inborn errors of metabolism, a discussion of newly discovered enzyme mechanisms, a chapter which discusses the new diseases found associated with the reticulo-endothelial system, and a chapter incorporating the amplified knowledge of the genodermatoses.

This volume is a useful book, for it brings our knowledge up to date. It is a comprehensive book, but it is not encyclopedic. The description of the various diseases is generally concise. Much less space is devoted to roentgen-ray physics and X-ray therapy of the skin than in the past. I would have preferred that therapy in general had been treated more fully.

Students and practitioners will find this book a useful addition to their dermatologic reading and for their dermatologic reference.—*S. Greenhill, M.D.*

BOOKS RECEIVED

PRINCIPLES OF NEUROLOGICAL SURGERY, by *Loyal Davis, M.D.*, and *Richard A. Davis, M.D.* (Philadelphia, W. B. Saunders Company, 1963. \$15.00).

MEDICINE AND THE STATE, by *Matthew J. Lynch, M.D.* and *Stanley S. Raphael* (Springfield, Illinois, Charles C Thomas, 1963).

PROGRESS IN NEUROLOGY AND PSYCHIATRY, EIGHTEENTH EDITION, by *E. A. Spiegel, M.D.* (New York, Grune & Stratton, 1963. \$14.75).

THE CARE OF THE GERIATRIC PATIENT, SECOND EDITION, Ed. by *E. V. Cowdry* (St. Louis, C. V. Mosby Company, 1963. \$11.85).

W. B. SAUNDERS COMPANY features the following new books in their full page advertisement appearing on page xvii in this issue.

ATOMIC ENERGY ENCYCLOPEDIA OF THE LIFE SCIENCES—Edited by *C. W. Shilling*
A unique new volume for those seeking general information on applications and effects of atomic energy in the fields of medicine, biology and agriculture.

CURRENT PEDIATRIC THERAPY—Edited by *Gellis and Kagan*
This new book gives you the best treatments, currently in use by leading authorities, for over 300 diseases and disorders that afflict children.

Iowa Association of Medical Assistants

Information, Please!

Questions, questions and more questions, and who knows the answers? Sometimes we feel that our desks have been mistaken for the information counter at Grand Central Station. Our doctors' patients and the public at large pose questions on a wide variety of subjects, and the speed and accuracy with which we can answer them, or tell where the required information can be obtained, will earn us and the medical profession a glowing reputation for efficiency and helpfulness.

Remember, we must make no specific suggestions without first having instructions or approval from our respective physician employers. We are not to answer questions relating to individual patients' medical problems or to offer diagnoses, but we may attempt answering routine, non-technical inquiries which would otherwise take up a doctor's valuable time.

For data on public and private health and social work agencies, and on pertinent laws or regulations, each of our doctors now has the 1963 edition of the IMS HANDBOOK OF RESOURCES AVAILABLE TO PHYSICIANS. It is intended for us quite as much as for them. Familiarize yourself thoroughly with its contents.

In addition, each of us might set up a card file to which she can readily refer for various types of supplemental information.

IMMUNIZATIONS

At what age does your doctor recommend that the first injection be given, and how often should boosters be given of DPT, DT, tetanus toxoid, and polio and smallpox vaccines? These data might well be included in your card index.

What immunizations are required or recommended for people who are planning trips to various foreign lands? Many diseases that have been eradicated from our country are still prevalent in other parts of the world, and travelers are apt to pick them up and bring them back, endangering not only their own health but that of each person with whom they come in contact. Health rules for international travel have been fairly well standardized, and the summary of them which is included in the HANDBOOK OF RESOURCES is based on the latest edition of IMMUNIZATION INFORMATION FOR INTERNATIONAL TRAVEL, published annually by

the U. S. Public Health Service. If the prospective traveler will need a yellow-fever inoculation, a preventive that your doctor can't supply, the HANDBOOK will help you show him where and when he can most conveniently get it.

RULES REGARDING COMMUNICABLE DISEASES

The IMS HANDBOOK contains a tabulation of important information about the incubation periods and the isolation requirements of the Iowa State Department of Health for each of 12 common contagious diseases. It also contains the list of "reportable" diseases, and instructions for making reports of such cases. In addition to the name of the patient, each report must include his or her address, the disease, the patient's age, the date of onset, the school attended, if any, and the patient's immune and non-immune siblings. Your card index should include the name and address of the city or county health officer to whom such cases must be reported.

RENTAL AND LOAN FACILITIES

Crutches, invalid chairs, hospital beds, walkers, etc. are obtainable from various sources on a rental or free-loan basis. The HANDBOOK will tell you some of the organizations that provide such services, but you will want to supplement that information by compiling a list of drug stores, medical supply houses, rental agencies and local service organizations from which they can be borrowed. The Red Cross or visiting nurse can help in locating unusual equipment when necessary, and if you add a notation to your card file on each such occasion, you can place a fund of useful information at your fingertips.

NURSING HOMES

Occasionally we need information on the nursing or custodial homes in our communities. The county nurse and the visiting nurse can help us gather such information. It might be well for us to get some idea of the relative costs of care at these institutions, but we shouldn't undertake to discuss the fees each of them charges, when we are talking with patients. We need mention only their names and locations.

IOWA MEDICAL SERVICE (BLUE SHIELD)

Since many of the patients with whom we deal are covered by Blue Shield and/or Blue Cross in Iowa and other states, we need to keep pace with changes in the policies sold by those organizations, so that we can explain to each person the benefits to which he is entitled under the terms of his contract. The IMS HANDBOOK contains a couple of pages on Blue Shield and write-ups of the Des Moines and Sioux City Blue Cross Plans, but it says almost nothing about specific Blue Shield contracts. Iowa Medical Service will be happy to supply your office with data on its current types of contract, and if you have questions about the submitting of claims, its representative will be happy to come to your office and assist you.

AID PROGRAMS—ADC, OAA, AB AND MAA

The IMS HANDBOOK contains a great deal of information about the Aid to Dependent Children, Old Age Assistance, Aid to the Blind and Medical Care . . . for Dependents of Armed Services Personnel ("Medicare") programs, and also on the Medical Aid for the Aged (Kerr-Mills) program that is about to start and on the Workmen's Compensation Law.

For care provided to ADC, OAA and AB clients, the 1958 IOWA UNIT FEE INDEX, approved by the IMS House of Delegates (a small grey pamphlet), lists the code numbers for reporting procedures and gives the allowance for each procedure. If you are in doubt about a fee allowance, if the case is unusual and if your charges are greater than the listed allowance, write a letter of explanation to accompany the claim, and it will be given special consideration. An authorization and a case number for each such client eligible for assistance is supplied by the county welfare office.

CONCLUSION

None of us should get the notion that she is a contestant for the title of "Miss Know-It-All," or "Dr. Annie." Rather, if we seek any reward, let it be the title "Miss Helpful."

Actually, by preparing to dispense such information as I have described, we are complying with the aims and purposes of our organization—to exemplify the high standards of the medical profession, to promote better public relations, and to encourage better doctor-patient relationships.

—Helen G. Hughes

The members of the Iowa Association of Medical Assistants extend their best wishes for a Holy and Happy Holiday Season to the Members of the Iowa Medical Society and to their medical assistants.

Iowa Social Welfare Payments
During the Fiscal Year 1963

The State Department of Social Welfare received and paid 510,969 claims for medical services to recipients of Old Age Assistance, Aid to Dependent Children, and Aid to Blind during the fiscal year ended June 30, 1963. These claims totaled \$12,239,708 and were paid directly to hospital out-patient services, medical doctors, doctors of osteopathy, chiropractors, druggists, laboratories, podiatrists, dentists, visiting nurses, optometrists, and licensed nursing homes.

Marshall C. Jewell, vice chairman of the state board of social welfare, said that these totals actually represented services available to about 94,061 people—35,131 aged, 2,242 blind, and 56,688 children and parents—who were eligible to receive medical assistance at some time during the fiscal year.

Licensed nursing homes received over half of the total expenditures. They were paid \$6,619,502, or an average of about \$122 per claim, for the OAA recipients alone. The next highest amount, \$2,763,156 was paid to druggists for recipients of all three programs, and averaged \$12.55 per claim. The third highest vendor payments were paid to medical doctors totaling \$1,670,130, and averaging over \$10.11 per claim. As is expected, the elderly men and women on OAA need and receive the largest share of the total medical expenditures, \$10,459,821 during the last fiscal year.

State Department of Social Welfare studies indicate that the costs of caring for the aged run much higher than costs for younger groups. Approximately 56,688 adults and children on ADC were eligible for medical care during the last fiscal year. Total medical costs were \$1,630,232, or an average of about \$28.75 yearly for each eligible individual. Medical costs for the blind totaled \$149,655, and averaged \$66.75 yearly for the 2,242 eligible recipients.

While these payments did not include every recipient in the programs covered, Mr. Jewell pointed out that every recipient was eligible, and that it is on this basis the State Board must estimate its needs for funds. He said that during October, 1962, payments made to vendors, exclusive of nursing homes, totaled \$491,224, and were paid on behalf of 16,981 or 58.3 per cent of the OAA recipients, averaging \$19.15 per patient. Of the ADC families, 6,231, or 59.7 per cent, received care which averaged \$24.74 per family. Six hundred thirty-six, or 51.3 per cent, of the AB recipients received care averaging \$18.67 each.

THE DOCTOR'S BUSINESS

Retirement Plans for the Self-Employed: New Developments

HOWARD D. BAKER

Waterloo



Late in September, the Treasury Department issued the first of its final regulations governing retirement plans for the self-employed. These regulations will very soon be complete, and the last obstacle impeding the establishment of such plans will have been removed.

As pointed out in previous articles in this series, these plans are not going to be "tax bonanzas" or the answer to every doctor's financial-planning problems. However, under certain circumstances, such a plan may offer attractive incentives for setting money aside. It is also true, with the law on the books, that there is an extremely good chance of liberalizations during future sessions of Congress, which will put deductions and limitations on an equal basis with those of corporate plans.

We have said before that the first two steps to be taken in this type of planning are (1) to determine the mathematical feasibility of your adopting such a plan, and (2) to determine the money you have available for such a plan. If you can't invest \$200 per month to age 60, you may as well forget a "plan" for the present.

After these two basic considerations, come several other important decisions:

1. Which is preferable, a profit-sharing arrangement or a pension plan? Because of its flexibility, we favor a profit-sharing arrangement.

2. On the basis of past performance, which investment medium is preferable? Past experience, greater growth potential and other advantages that we shall discuss at length in future bulletins cause us to favor the two or three best open-end investment funds over such plans as insurance, bank trusts, bond purchases and the AMA Retirement Plan.

3. We feel that a plan should provide for voluntary contributions for both the owner and his em-

ployees, maximizing the potential tax benefit and eliminating most of the danger of excess contributions in any one year.

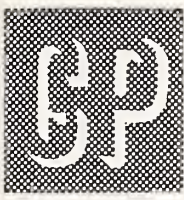
It now appears that qualifying your plan is going to be simple and fast. The Internal Revenue Service has issued rulings that provide for the approval of master or prototype plans by banks, insurance companies and investment funds. By making your scheme coincide with a master plan as closely as possible, you can secure a portion of your approval automatically. The specific details of your plan as regards individual employees, the vesting of rights, withdrawal from the plan *et cetera* can be filed either before or after your plan is initiated, and even after you have taken a deduction on your tax return. Legal work and fees will be at a minimum, although we strongly recommend your retaining an attorney to draft the plan and to handle the filing of your request for approval with the IRS.

The greatest area for caution is in the investigation and selection stage. Don't let an overzealous salesman stampede you into adopting his plan before you have investigated all possibilities and have consulted with your business advisor and your attorney. Even if you are eligible to gain from a plan, the wrong type of arrangement or the wrong medium for investment may doom your plan to failure.

DON'T BE IN A HURRY

For most doctors, 1964 is the logical target for adopting a plan. A great deal more experience will have been accumulated in the next six to nine months, and more rulings and regulations will then have been made. After 11 years of waiting, one more year will not nullify the logic of a plan. The sacrifice involved in waiting an additional year will be a *maximum* \$200-\$300 of tax savings, and the advantage of another year's experience may completely offset it.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.



Iowa Chapter of the American Academy of General Practice

Chapter Objectives

The Iowa Chapter of the American Academy of General Practice is working for continued forward progress

- (1) to promote and maintain high standards of the general practice of medicine and surgery
- (2) to encourage and assist young men and women in preparing, qualifying, and establishing themselves in general practice
- (3) to preserve the right of the general practitioner to engage in medical and surgical procedures for which he is qualified by training and experience
- (4) to assist in providing postgraduate study courses for general practitioners, and to encourage and assist practicing physicians and surgeons in participating in such training
- (5) and to promote the science and art of medicine and surgery and the betterment of the public health, and to preserve the right of free choice of physician to the patient.

The president of the Iowa Chapter, Dr. William A. Castles, and the Board of Directors have already appointed the necessary committees to accomplish the foregoing aims, ideals and objectives. Following are the committees appointed for the 1963/1964 fiscal year:

CREDENTIALS COMMITTEE

	Term Expires
G. A. Paschal, M.D., Webster City, Chairman	
Thomas A. Kane, M.D., Boone	1964
R. F. McCool, M.D., Clarion	1965
Joseph J. Weyer, M.D., Fort Dodge	1966

HOSPITAL COMMITTEE

Raymond F. Frech, M.D., Newton, Chairman	
L. H. Jacques, M.D., Iowa City	1964
George Callahan, M.D., Iowa City	1964
Olin A. Elliott, M.D., Des Moines	1965
John Hess, Jr., M.D., Des Moines	1965
F. D. McCarthy, M.D., Sioux City	1966
John C. Garland, M.D., Marshalltown	1966

EDUCATION & SCIENTIFIC ASSEMBLY COMMITTEE

C. H. Stark, M.D., Cedar Rapids, Chairman	
Wm. A. Castles, M.D., Dallas Center, President	
A. J. Havlik, M.D., Tama	1964
Clyde J. Smith, M.D., Gilmore City	1964
Wm. D. Perrin, M.D., Sumner	1965
Keith Woodhouse, M.D., Cedar Rapids	1965
John R. Camp, M.D., Britt	1966
Richard Hammer, M.D., Des Moines	1966

Roger Boulden, M.D., Lenox	1967
Harold Moessner, M.D., Amana	1967

FINANCE COMMITTEE

R. A. Huber, M.D., Charter Oak, Chairman	
Enfred E. Linder, M.D., Ogden	1964
Joseph G. Fellows, M.D., Ames	1965
A. T. Nielsen, M.D., Ankeny, Treasurer	

ARTICLES OF INCORPORATION & BY-LAWS

Arnold T. Nielsen, M.D., Ankeny, Chairman	
Carl Aschoff, M.D., Cedar Rapids	1964
John R. Moes, M.D., Waterloo	1964
John Klein, M.D., Muscatine	1965
Marvin Moles, M.D., Newton	1965

PUBLIC RELATIONS

Clyde J. Smith, M.D., Gilmore City, Chairman	
Mr. M. S. Enabnit, Des Moines, Editor	
R. E. Clark, M.D., Manchester	
Stewart Olson, M.D., Des Moines	

MENTAL HEALTH COMMITTEE

Wm. D. Perrin, M.D., Sumner, Chairman	
Richard Young, M.D., Clarion	
M. L. Scheffel, M.D., Malvern	

PUBLICATIONS COMMITTEE

Keith Wilcox, M.D., Muscatine, Chairman	
V. L. Schlaser, M.D., Des Moines, Editor	
Mr. M. S. Enabnit, Des Moines, Managing Editor	
Donald H. Kast, M.D., Des Moines	
Rex Morgan, M.D., Sioux City	
C. P. Hawkins, M.D., Clarion	

MEDICAL ECONOMICS COMMITTEE

H. W. Mathiasen, M.D., Council Bluffs, Chairman	
C. H. Stark, M.D., Cedar Rapids	
S. P. Leinbach, M.D., Belmond	
E. A. Larsen, M.D., Centerville	

GENERAL PRACTICE COMMITTEE

Elmer M. Smith, M.D., Des Moines, Chairman	
John B. Thielen, M.D., Fonda	
C. P. Hawkins, M.D., Clarion	
Wm. A. Seidler, Jr., M.D., Jamaica	

CIVIL DEFENSE & DISASTER COMMITTEE

John R. Jaquis, M.D., Reinbeck, Chairman	
J. F. Roules, M.D., Mediapolis	
Billy England, M.D., Griswold	
Harold Ganzhorn, M.D., Mapleton	
Wendel W. Taylor, M.D., Sheffield	

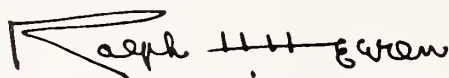
MEMBERSHIP COMMITTEE

Donald H. Kast, M.D., Des Moines, Chairman	
L. D. Caraway, M.D., Monticello	
John Powers, M.D., Estherville	
Reuben Widmer, M.D., Winfield	
Lester Larson, M.D., Decorah	
Frederic Ashler, M.D., Hamburg	

ADVISORY COMMITTEE

All Past Presidents

STATE DEPARTMENT OF HEALTH



RALPH H. HEEREN, M.D., ACTING COMMISSIONER

Safety Education Program for School Bus Drivers

A life-size doll from the Iowa State Department of Health is helping Iowa school bus drivers learn the correct way to give mouth-to-mouth resuscitation at the scene of an accident. It is all part of the four-year training program set up by the State Department of Public Instruction aided by the Iowa Highway Patrol and the Iowa State Department of Health.

School bus drivers who successfully complete the yearly training program receive three semester hours of credit from the State College of Iowa. The program is set up for four years with three hours of credit given each year. If the school bus driver completes the entire course, he will receive a State College of Iowa certificate from the Safety Education Department.

"Although the school bus driving record in Iowa is pretty good, last year we had about three fatalities involving school buses. And, of course, anyone killed is too many," says Major Howard Miller, Iowa Highway Patrol. "This is why the State Department of Public Instruction has set up the bus driver training school. We want to promote safety-mindedness on the part of every bus driver. A school bus driver has a terrifically difficult job."

With these facts in mind, the State Department of Public Instruction has developed a four-year program, with different courses taught each year. Last year, courses taught at 30 centers throughout the state included: Defensive Driving; School Transportation Laws; Iowa State Department of Public Instruction Rules and Regulations; Liability of the Driver and Insurance Coverage; Checking the Vehicle; and First Aid. Four hundred nineteen schools participated in the training course, with 3,687 school bus drivers attending classes.

Attendance for this year's bus-driver training classes is running ahead of last year's, and it is almost certain that over 4,000 men will be receiving this instruction.

"Most school boards and superintendents in Iowa feel that these training sessions are invaluable for their bus drivers. In most cases, when a driver signs his contract he agrees to take the training course as set up by the State Department of Public Instruction," says Major Miller. "We have found that our student body consists of not only bus drivers, but of superintendents, board members, and other community minded citizens."

Morbidity Report for Month of October 1963

Diseases	1963 Oct.	1963 Sept.	1962 Oct.	Most Cases Reported From These Counties
Diphtheria	0	0	2	
Scarlet fever	155	78	179	Dubuque, Johnson, Polk
Typhoid fever	1	0	0	Black Hawk
Smallpox	0	0	0	
Measles	34	34	251	Buena Vista, Polk, Scott
Whooping cough	12	35	0	Pottawattamie, Scott
Brucellosis	9	10	4	Dubuque, Louisa, Scott
Chickenpox	39	17	116	Clay, Dubuque, Polk, Pottawattamie
Meningococcic meningitis	0	1	0	
Mumps	374	173	84	Boone, Dubuque, Mills, O'Brien, Polk, Scott
Poliomyelitis	0	0	2	
Infectious hepatitis	40	13	44	Osceola, Polk, Tama, Woodbury
Rabies in animals	19	28	24	
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	24	28	21	For the state
Syphilis	73	71	90	For the state
Gonorrhea	103	95	114	For the state
Histoplasmosis	1	2	7	Black Hawk
Food intoxication	0	0	0	
Meningitis (type unspecified)	2	4	1	Linn, Polk
Diphtheria carrier	0	0	8	
Aseptic meningitis	0	0	0	
Salmonellosis	4	4	4	Polk
Tetanus	1	1	0	Chickasaw
Chancroid	0	0	3	
Encephalitis (type unspecified)	2	2	1	Des Moines, Palo Alto
H. influenza meningitis	0	0	2	
Amebiasis	1	2	2	Boone
Shigellosis	10	3	2	Polk
Influenza	40	0	0	Polk



In the Public Interest

Iowa's Health Care for the Aged Is Now Entirely Adequate

Following is the IMS statement submitted to the Ways and Means Committee of the U. S. House of Representatives during its hearings on the King-Anderson Bill (H.R. 3920, 88th Congress). Physicians and other opponents of the Social Security approach can advantageously quote from it in the letters they write to their respective Congressmen, and to Hon. Wilbur Mills, chairman of the Committee.

Iowa does not now have an obvious need to supplement its programs for providing health care to the near-needy aged. Its Legislature this year, at the behest of the Iowa Medical Society and similar groups of public spirited citizens, appropriated money for a Kerr-Mills program, so that the numbers of the near-needy who haven't previously been helped in securing health care, and the extent of their needs, might be accurately determined.

Statistically, the situation is approximately as follows:

Iowans 65 or more years of age*	317,974	
OAA recipients in Iowa as of 1/1/'63	30,000	
Over-65 inmates of Iowa institutions*	14,460	
World War I veterans eligible or about to be eligible for VA care (average age 65.8 years)*	49,466	
Well-to-do persons 65 or over (estimate)	30,000	
Iowans over 65 covered by voluntary health insurance (estimate)**	173,934	297,860
		<hr/> 20,114

* Source: 1960 Census.

** As of January 1, 1962.

These are not precise figures in all instances, and they were not all gathered at precisely the same time, but they constitute reasonable approximations. The 1960 Census of Population (PC(1) 17D) shows that there were 317,974 persons 65 or more years of age in Iowa. That number has doubtless grown somewhat in the succeeding three years, but it remains somewhere nearly accurate. The Health Insurance Institute of America estimates that on January 1, 1962, there were 54.7 per cent of over-65 Iowans who held health insurance. That figure indicates that at least 173,934 individuals were caring for themselves by that means. Several other groups are quite fully provided for. There were 14,460 inmates over 65 years of age in Iowa institutions, according to the 1960 Census. World War I veterans numbering 49,466 were residents of Iowa when the 1960 Census was taken, and their average age at that time was 65.8 years. The total is slightly smaller now, of course, but their average age must be approximately 68.8 years, and by signing an application form can secure complete health care without cost at Veterans Administration facilities. Then a considerable number of the elderly—surely as large as the number of OAA recipients—are sufficiently well off so that they can pay their health care bills without difficulty, as they incur them.

The remaining 20,114 elderly Iowans, it should be emphasized, have been taken care of quite satisfactorily in the past, at public expense if their own resources were inadequate. Polk County, Iowa, in which Des Moines is located, has a county hospital where the near-needy as well as the in-

digent are provided surgery and medical and hospital services free of charge, and at county, community and private hospitals throughout the rest of the state, varying numbers of patients are given necessary care free of charge, though they don't all qualify for Old Age Assistance. All physicians in private practice, of course, are accustomed to cut their charges or to submit no bills for the care of the economically marginal ones of their patients, regardless of age.

Like many other states, Iowa operates a public hospital in connection with the S.U.I. College of Medicine, in Iowa City, and patients are sent there from throughout the state for surgery and/or medical care, either outpatient or inpatient, partially at state expense and partially at the expense of their respective county governments. The administrator of University Hospitals, Iowa City, reports that 15,668 such patients were admitted there between July 1, 1961, and June 30, 1962, and he estimates that at least 50 per cent of them were 65 or more years of age. There are no comprehensive records that show how many were relief recipients, in the generally understood meaning of the term, and how many were in the near-needy category.

Some figures regarding nursing homes in Iowa may help to show the concern that our people are showing for their elderly fellow-citizens. Recent authoritative reports indicate that the state is rapidly becoming well supplied with such facilities. In 427 existing homes (all but 54 of them proprietary), there are 11,953 beds. Eighty-three of them (41 proprietary and 42 non-profit), containing 3,915 beds, have been built since 1960, and 60 more of them (39 proprietary and 21 non-profit), to contain 3,757 additional beds, are now in the planning stage. These institutions provide, or will provide, appreciable amounts of health care to the aged, and in roughly a third of the cases can be expected to subsidize its cost to a considerable extent at the sponsoring church or fraternal organization's expense.

THE IOWA KERR-MILLS PROGRAM

The Kerr-Mills program which will be started in Iowa on or about December 1, 1963, will certainly provide for any currently unmet needs of the near-needy elderly.

1. The General Assembly of Iowa, last spring, appropriated \$1,680,000 as the state's contribution to the program for each of the next two years. These sums, together with federal matching funds, will provide about \$4,000,000 per year. In addition, the Assembly's Interim Committee was authorized to release up to \$320,000 per year of additional state money, in case the original appropriation proves insufficient.

2. To be eligible for Medical Aid to the Aged, an Iowan may have an income after medical expenses of up to \$1,500 per year if single, or up to \$2,200 per year combined with that of his or her

spouse. A single person may have assets of up to \$2,000, and a couple may have assets of no more than \$3,000, exclusive of a home and an automobile.

The 1960 Census (PC(1)17D) showed the median annual income of Iowa families with heads 65 years of age or older to be \$2,796. The median annual income for single persons in that age group wasn't clearly stated, but since Iowa ranked thirty-sixth among the states as regards incomes of the elderly, the figure can be presumed as not in excess of \$1,050 per year, which was the national median for such people.

Thus it is apparent that MAA will be available to about half of the elderly people of Iowa who are not already receiving health services under the Old Age Assistance, Aid to the Blind, or Aid to the Disabled programs. It is anticipated that the case load for MAA will not exceed 1,500 per month.

3. The program will furnish any or all of the following, after the eligible recipient has paid or obligated him- or herself to pay \$50 for health care during the current calendar year:

Office, clinic or hospital care rendered by licensed doctors of medicine, osteopaths, chiropractors, podiatrists, dentists, optometrists and nurses.

Hospitalization.

Nursing-home care for up to 180 days following hospitalization.

Drugs.

Laboratory services.

Supplies authorized by any of the above-named practitioners, within the scope of his or her practice. These include prosthetic appliances of all sorts.

4. The Iowa Medical Society proposed and the 1963 General Assembly of Iowa enthusiastically accepted the idea that during the initial two years of MAA, statistics should be collected to provide a basis for converting the program into a state-federal subsidy for the private health insurance policies of individual MAA-eligible persons. The physicians and the legislators agreed that such an arrangement would best preserve the privacy and dignity of the aid recipients, and would be most nearly consistent with the principles underlying the American free-enterprise system.

From what has been said in this statement, it should be obvious that Iowa—the state with proportionately the greatest number of elderly citizens—has been doing a great deal to assure sufficient health care for all such people, and is about to embark on a program which will certainly remedy any previously-existing deficiencies. Further, it should be obvious that the passage of the King-Anderson Bill would be altogether superfluous, as far as our state is concerned, quite apart from the fact that it would be enormously burdensome from the standpoint of Social Security taxation, and wasteful in providing assistance to many people who are economically self-sufficient.



Woman's Auxiliary News



The President Reports—

It was a great honor and a worthwhile experience to attend the National Convention of the Woman's Auxiliary to the American Medical Association, which was held at Atlantic City, June 16-20, 1963. It is impossible for me to review all the details of such a meeting in this report, but I shall give you some of the highlights.

On Sunday I attended a tea and style show, and the program on medicine and religion; I attended all the business sessions on Monday, Tuesday, Wednesday and Thursday; and I went to the AMPAC breakfast at 7:00 a.m. on Wednesday, as well as the reception for Mrs. Rodney Stoltz that evening; and I attended the luncheon and movie on Thursday. I enjoyed the social events, but the business meetings were most informative. We had the opportunity to learn what other state Auxiliaries have accomplished during the past year.

The program plans for 1963 were presented, and the importance of work at the county level and participation by all members were stressed. It is vital to consider community needs in choosing projects you actually are to carry out. It is better to do one project well than to make a half-hearted attempt to do many projects.

The 1963 program outlined by Mrs. Stoltz, our national president, follows. "Serve and Communicate" is the theme for the year. The committee structure seems to divide our work into three categories: (1) technics of operation; (2) orientation and education of our members; and (3) service to others. Although there is no absolute cleavage of functions, if committees work in groups, rather than as entirely separate units, there can be more exchanges of ideas and methods, and less duplication of effort.

This year the national program committee will correlate the work of committees on membership, BULLETIN circulation, AMA-ERF, and legislation. All are primarily working with Auxiliary members, even though some facets of their activities relate to the community as a whole. The prime objective of the program committee will be to prepare each member to speak with knowledge and conviction—to "serve and communicate." We need to provide better education for our members.

Possibly the most important Auxiliary contribution comes through the work individual mem-

bers do as members of churches and other community organizations, where their knowledge of health programs and problems, and their familiarity with and easy access to health materials can be invaluable.

SUMMARY

Plan for progress: A SAC program for 1963-64
Theme: Serve and Communicate

Method: Conserve effort and consolidate ideas through grouping committees.

A. Operate efficiently

1. By-laws
2. Finance
3. Publications
4. Reports
5. Parliamentary procedure

B. Prepare ourselves to speak for medicine with knowledge and conviction and through Program.

1. Membership
2. BULLETIN circulation
3. AMA-ERF
4. Legislation

C. Prove medicine's concern for the welfare of the community through community service.

1. Civil Defense
2. Health Careers
3. International Health Activities
4. Mental Health
5. Rural Health
6. Safety
7. Special Projects

CONFERENCE OF STATE PRESIDENTS AND PRESIDENTS-ELECT

The Conference of State Presidents, Presidents-Elect and National Chairmen of Standing Committees of the Woman's Auxiliary to the AMA met at the Drake Hotel, in Chicago, on October 6-9, 1963. Emphasis, this year, was placed on Service and Communication. It is through Auxiliary program that we prepare ourselves to speak for medicine with knowledge and conviction.

The BULLETIN, the official publication of the National Auxiliary, presents information and suggestions from physicians and Auxiliary leaders, and is published four times a year. Have you renewed your subscription? Mrs. A. C. Richmond is the regional BULLETIN chairman.

Through guest speakers and panel discussions,

a great deal of new and useful material was offered for the numerous state and national projects.

A film, "The Cry for Help," was shown. This film is part of the training for policemen, so that they will know how better to handle suicidal people, and in some instances to prevent their doing away with themselves. It is not a pleasant experience, but it deals realistically with a serious problem. Dr. Andrew Toman, coroner of Cook County, Illinois, talked on "How to Prevent Suicides."

Communication is complex and beset with pitfalls. If we are to accomplish our purpose of assisting the medical society in its program for the advancement of medicine and public health, communication with other groups is essential.

The National Auxiliary advises us concerning the activities of constituent Auxiliaries, so as to help them tailor their work, with the advice of their respective medical societies, to fit their particular sizes, interests and needs. The very small Auxiliary can keep abreast of the overall work and materials available through program and community service. Committees must plan together, if duplication of effort is to be avoided. A single project well done will accomplish far more than several poorly-executed ones.

—Mrs. G. J. McMillan, President

Doctor's Reception Room Pamphlet Rack

A rack filled with informative pamphlets, now available from the AMA, invites patients to learn more about a wide variety of health subjects. The booklets are both attractive and authoritative.

The rack contains 25 copies each of the following pamphlets:

Your Family Health Record—a handy place for recording the basic health facts for the entire family.

Immunization—a card to hang in the home medicine cabinet. Besides information on the proper timing of booster shots, etc., it contains vital instructions on what to do in case of an accidental poisoning.

Stay Young, Think Young—a booklet containing good advice on how people can get the most out of their later years.

Merchants of Menace—points up the inherent dangers of placing faith in special patent medicines, health fads and cures, instead of in balanced diets and professional counsel.

Healthy Way to Weigh Less—a straightforward discussion of the sensible way to lose weight.

Are you fit to Drive?

Let's Use, Not Abuse Health Insurance.

In addition, a wide range of supplemental pamphlets can be ordered. The racks may also be placed

in public buildings such as banks, libraries, post offices, etc. The price of the rack, with an initial supply of booklets, is \$8.95.

The AMA also offers *twelve health posters* and an aluminum frame in which to display them for \$8.95 postpaid. Each one of them is designed for a particular month of the year, and there is room at the back of the frame for storing the 11 of them that, at any given time, are not on display.

Encouragement of Close Physician-Clergyman Relationships

The sole purpose of the Department of Medicine and Religion of the AMA is to create a climate for communication between physicians and clergymen that will lead to the most effective care and treatment of patients in whom both groups are interested. To achieve this purpose, the Department is working through physicians to strengthen acquaintanceships and encourage exchanges of ideas between members of the two professions in each community. The Auxiliary can help.

There was a panel discussion on physician-clergy relationships, sponsored by this new AMA department, at the AMA meeting in Atlantic City last June. Bishop Fulton J. Sheen, of New York, a member of the AMA Committee on Religion and Medicine, told the meeting that medicine must care for the total patient. There are no diseases; there are only sick people. The object of medicine is the human person. Man is much more than a mass of nerves, tissues, blood and organs. The object of medicine is the suffering person.

Dr. Edward Rynearson, of the Mayo Clinic, Rochester, Minnesota, also a member of the panel, told the audience that more than 50 per cent of the patients in any waiting room are there because of the many changes of life. He pointed out that the physician must have the time and the interest to help these people "who are experiencing real symptoms as a result of a pounding inflicted by life." He expressed the opinion that strong religious beliefs protect people from tension and anxieties which might otherwise damage or destroy them.

Both men voiced opposition to the use of extraordinary measures for prologing the life of a patient in the final stages of a terminal illness.

Rev. Dr. Paul McCleave, director of the AMA Department of Medicine and Religion, told of ways in which the Auxiliary can promote the work on which his Department has embarked. Principally, he hopes that Auxiliary members will help to interest their husbands in projects to bring physicians and pastors closer together.

There are many ways in which the doctors' wives can get information on this subject. A pamphlet, "The Physician, the Clergy and the Whole Man," is available. A new film, "The One

Who Heals," a 28-minute, 16 mm. color movie, deals with the relationship between the clergy and the medical profession in various situations involving patients and their families. Medical leaders recognize that men cannot be separated into parts for the care and treatment of an illness. Man is a whole being, and his health is affected by physical, spiritual, mental and social factors. This film offers no absolute answer, but stresses the role of the physician in reaching decisions in the handling of difficult cases. Prints are available from the AMA film library.

Speakers are available from the AMA Speakers' Bureau, Chicago. To request one of them, address Dr. McCleave at the AMA, 535 North Dearborn Street, Chicago 60610.

Many county medical societies in Iowa have initiated physician-clergy meetings at the local level. The IMS president has appointed a state Committee on Medicine and Religion, which held its initial meeting on November 21. It will be glad to assist you with programs in this new field. For more information, refer to the issue of "In the Public Interest" which was mailed to you in August. It deals with this particular subject.

Polk County Auxiliary

The Woman's Auxiliary to the Polk County Medical Society met on November 8 at the Iowa Power and Light Company, in Des Moines. Dr. Sidney Sands, a Des Moines psychiatrist, spoke on the topic "Science and Human Behavior." Mrs. John Thomsen and Mrs. James Kelsey were in charge of reservations.

The board of the County Auxiliary met on Monday, November 11, at the home of Mrs. Harold J. McCoy, in Des Moines.

In Memoriam Contributions

1. MEMORIALS BY THE COUNTY AUXILIARIES AND MEMBERS-AT-LARGE

- A. *An organized county auxiliary or a member-at-large* may honor a deceased member by sending a contribution, at any time, to the State Health Educational Loan Fund treasurer (HELF), who in turn will send a card acknowledging the memorial to the nearest of kin of the deceased Auxiliary member. As a matter of fact, any person, whether a member or non-member of an Auxiliary, may send a contribution to the HELF in memory of a deceased member. Presently the state HELF treasurer is:

Mrs. J. G. Fellows
1017 Burnett Street
Ames, Iowa 50010

Along with the contribution, please send the following information:

- (1) Name, complete address and county of deceased member.
- (2) Name, complete address and county of Auxiliary or contributor.
- (3) Name, complete address of person to whom the acknowledgment card should be sent.

B. MEMORIALS FOR PHYSICIAN-HUSBANDS OF MEMBERS

Upon the death of an Auxiliary member's physician-husband, the above procedure (as in 1 A) is followed by the Auxiliary, except that in this case, the contribution is sent to The American Medical Association Education and Research Foundation (AMA-ERF) state chairman who presently is:

Mrs. G. J. McMillan
436 Avenue C
Fort Madison, Iowa 52627

With the contribution, please include:

- (1) Name, complete address and county of deceased physician.
- (2) Name, complete address and county of Auxiliary or contributor.
- (3) Name, complete address and county of wife of physician. If wife is deceased and has been an Auxiliary member, kindly send name of "next of kin" to whom the acknowledgment card will be sent by the AMA-ERF state chairman.

2. MEMORIALS BY THE STATE AUXILIARY

- A. In addition to the procedures in 1 A and B above, a county Auxiliary or a member-at-large may request that a deceased Auxiliary member be honored by the State Auxiliary. No contribution for this memorial is necessary, since the State Auxiliary has an allocation in its budget for this type of memorial which is sent to HELF.

This memorial is not to be construed as a substitute for the contributions mentioned in the previous paragraphs (1 A and B).

With the request, it is necessary to include the following information to the state finance secretary:

Mrs. Elmer A. Vorisek
6205 Woodland Road
Des Moines, Iowa 50312

- (1) Name, complete address and county of deceased member.

- (2) Name, complete address and county of Auxiliary sending the name of the deceased member.
- (3) Name, complete address of husband or person who is to receive the acknowledgment card of the memorial from the HELF treasurer.

B. MEMORIALS FOR PHYSICIAN-HUSBANDS OF MEMBERS BY THE STATE AUXILIARY

Upon the death of the physician-husband of a state Auxiliary member (this includes the members-at-large), the procedure in 2 A is followed.

No contribution is necessary, but in this case the State Auxiliary will send its donation to the Iowa Medical Foundation, 529-36th Street, Des Moines, Iowa 50312

Kindly send to the state finance secretary the following information:

- (1) Name, complete address and county of deceased physician.
- (2) Name, complete address and county of Auxiliary.
- (3) Name, complete address and county of physician's wife. If the wife is deceased, please send name and complete address of "next of kin" to whom the acknowledgment card will be sent from the Iowa Medical Foundation.

3. To reiterate:

Any person, whether a member or non-member of an Auxiliary, may send a contribution in memory of any deceased person, a contribution as a gift, or a contribution to celebrate a happy occasion, to:

The HELF
The AMA-ERF
The Iowa Medical Foundation

all of which are organizations for health-educational purposes. The addresses of these worthy organizations appear in the paragraphs above. Donations to these organizations are urged, and they will be gratefully accepted.

—MRS. ELMER A. VORISEK
State Auxiliary Finance Secretary

Optimistic AMA Report on Medical Education

The 1962-63 annual report on medical education, prepared by the AMA Council on Medical Education and Hospitals, cited the following developments:

—Firm commitments for the construction of six new medical schools, bringing to 11 the total number now in the planning stage.

—A 10 per cent increase in the number of medical school applicants, the first upturn in six years.

—Evidence of an enlarging pool of potential medical teachers.

A major concern of recent years has been adequacy of the future supply of physicians for a growing population with increasing expectation for medical service, the council said. An increase in the future supply of physicians is a well-documented necessity and this depends primarily on expansion of facilities and an increase in medical teachers and students.

"Though it is too early for certainty, still, on the basis of current progress, cautious optimism can be expressed in regard to satisfying future needs," the Council said.

Despite the generally optimistic report, the Council said efforts to interest more students in a medical career, which have been intensified in recent years, should not be relaxed. Medicine will continue to compete with an increased number of other "status professions" for top students.

The public announcement of six new medical schools have been made by the University of Arizona, Tucson; Mt. Sinai Hospital, New York City; University of Massachusetts, Amherst; University of California, San Diego; Michigan State University, East Lansing, and Pennsylvania State University, University Park.

Of the five new schools previously announced, New Mexico plans to enroll its first medical students for the 1964-65 academic year; Rutgers plans to accept an entering class for 1965-66, and the University of Texas, San Antonio, for 1966-67. Brown has accepted for 1963-64 its first college class which will in part constitute its first medical students in the next few years, and the University of Connecticut is in the process of developing its architectural and academic plans.

There are many other institutions which are giving serious study to the establishment of medical schools, the report said, and a growing emphasis on construction of teaching facilities is anticipated as a result of the Health Professions Educational Assistance Act passed by Congress this year.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. G. J. McMillan, 436 C Avenue, Fort Madison
President-Elect—Mrs. H. G. Ellis, 5504 Shriver Avenue, Des Moines 12
Recording Secretary—Mrs. N. A. Schacht, 1025 North 23rd Street, Fort Dodge

Corresponding Secretary—Mrs. F. L. Poepsel, Box 176, West Point
Treasurer—Mrs. M. B. Cunningham, Norwalk
Editor of THE NEWS—Mrs. R. H. Palmer, Box 568, Postville

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